

COMPUTER EXPRESS

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

AMIGA

- 020 power for A500
- Cheap upgrade
- Back-up cartridge

ST

- Protext upgrade
- Ghosts 'n' Goblins
- Low cost memory

PC

- Big Blue at home
- Soviet PC clone
- Japanese CD-PC

COMMS

- Micronet clampdown
- Dream modem

ARCHIMEDES

- New DTP package

**BBC•C64•MSX
SPEC/SAM•QL
XE•CPC•PCW**
SPECIALIST COLUMNS



There is life beyond the keyboard - page 54



Quartet software comes to the Amiga - page 52



Sampling and MIDI for the Spectrum - page 50

ROBOTS AT HOME: THE RACE IS ON!

**Everybody
will have one
within three
years claims
World Robot
Olympics
organiser**

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Jumping Jack Son
Musical, ridiculous, puzzling
and jolly good fun - page 14

12-YEAR-OLD BOY IN US HACKING FRAUD SCANDAL

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JAPANESE VIRUS WRITER 'WAS A HIRED SABOTEUR'

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Red October reissue

Following a much-publicised Royal Premiere on April 17, *The Hunt for Red October* looks like becoming a big hit as a film – as well as coming back for seconds, and even thirds, as a computer game.

Grandslam is re-releasing its already successful *Hunt for Red October* simulation based on the book, and this is available for the 16-bit and £9.99 for the 8-bit.

Meanwhile the company is developing another computer version, this time based on the movie starring Sean Connery and due to be launched in late summer.

In the film Connery, right, plays a Soviet submarine captain trying to avoid his own navy and cross the Atlantic – so he can defect and present the Americans with a state-of-the-art nuclear sub. ■



Schoolboy investigated in credit card rip-off case

US 12-YEAR-OLD IN FRAUD SCANDAL

An unidentified 12-year-old boy is under investigation by the Michigan Computer Crime Task Force for alleged hacking and credit card fraud offences.

The boy is said to have hacked into the giant electronic database at the credit rating company TRW, stolen credit card numbers and posted them on computer bulletin boards. The information was then allegedly used by other users of the bulletin boards to fraudulently buy goods and make telephone calls.

Task force members revealed that they had discovered the boy's address via

a tracking system implemented after TWR discovered the security breach.

Early reports that the boy had been arrested and charged were later denied by John Britt of the US Secret Service, who did, however, confirm that "during the execution of a search warrant at the home of the boy, computer equipment was seized for further investigation".

Britt stated that any decision on charging the boy would be made by the Michigan State Police, whose Lieutenant Hogan confirmed that a number of arrests on fraud and theft charges were anticipated, but the authorities needed to know

which files had been tapped, who had used the numbers, in what cities they had been used and what had been stolen. "TRW's still trying to figure that one out," he said.

The boy's family are reported to be stunned by the affair. His mother told reporters that he was a maths and geography whizz-kid who spent up to five hours per night and 14 hours a day at week-ends working on his computer.

Said his mum: "He didn't bother me. He sat there on his computer – well, I figured, computers, that's the thing of the day." ■ (UPI/OLT/Newsbytes)

CONSOLE WAR MOVES UP A GEAR



More details on Sega's new colour hand-held GameGear – pictured above – have emerged which reveal that the tiny unit features optional TV tuner and video camera inputs.

Even before its September launch, the machine looks set to rock sales of Nintendo's Gameboy and Atari's Lynx, as the expected Japanese retail price will be as little as £70. Sega's reasoning behind the pricing is to enable parents of primary school children to afford a machine which it bills as "the arrival of the age of colour".

Eight software titles selling for around £10 each will be available by the end of the year, and up to eight gamers will be able to play networked games together.

Meanwhile the expected arrival of a portable PC Engine, nicknamed the Handy Grafx, will further add to competition in this lucrative market. However, unlike the Gamegear, the Handy Grafx will play existing PC Engine titles – a feature which may prove crucial. ■

The ultimate in add-ons?

Real World Graphics has announced the world's first plug-in board which will turn a PC into a true 3D graphics supercomputer.

The board has four parallel Intel 860 RISC processors and offers 16.7 million shades with a software-selected resolution of up to 1,024 x 768 non-interlaced.

It is claimed that the board performs at 100,000 Gouraud polygons per second with 500,000 10-pixel vectors per second – so now you know.

All this for a mere £12,000. Call 0992 55442 for details. ■

Unix on your lap

Sony and Toshiba have introduced laptops that can run Unix, the powerful operating system favoured by mainframes and top-end PCs.

The Sony and Toshiba laptops allow mainframe users to run the same programs on the move, and take laptop computing into the realms of the workstations. Previously, IBM had had this market to itself with a laptop operating system similar to Unix. ■

Robot Olympic games will test the best of the the world's androids

CONTEST STARTS THE RACE FOR THE HOME ROBOT

ROBOT PETS IN
THREE YEARS
PREDICTION



• Working domestic robots could be within sight if research work continues.

Intelligent fun robots will be common in the home by the middle of the decade, predicts Dr Peter Mowforth of the Turing Institute, the body organising the world's first Robot Olympics which will run in Glasgow this autumn.

"Bearing in mind how successful Transformers were, I'm sure that in about three years we could all have toy robots," says Mowforth, "insect-like things that will seek out the shade, follow you around or try to talk to you. I can imagine little six-legged creatures running around every home."

The Robot Olympics will be held at the University of Strathclyde Sports Centre on September 27 and 28. A dozen countries have already confirmed that they will be sending 26 entrants between them – with an eventual total of around 60 expected.

There are a number of categories in which entrants can compete. A kind of high-tech 'I-Spy' will make comparisons

Report by Ian Pemble

between various vision and recognition systems and there is another category for bipedal motion. Other contestants include an aquatic competitor from the Massachusetts Institute of Technology and the organisers are hoping to attract a Japanese skiing robot. The Olympic flame will, of course, be lit by robot.

Dr Mowforth was keen to stress the serious side of the event. "Twenty years ago Britain led the world in advanced robotics," he explained, "but a disastrous government report, insisting that the development of artificial intelligence (AI) was a waste of time, almost killed off British involvement. Now at last we are experiencing a revival."

"Advanced robotics generates research into materials science, high quality engineering and new computer hardware and software, plus other areas like pneumatics and the design of lightweight power supplies – we really are at the cutting edge."

"Our aim is to give researchers from all over the world the chance to show what they can do. Too often at conferences you can only talk theory and get to see a video if you are lucky – people want to see them working."

"The Robot Olympics will also be a chance for researchers to interest commercial investors. There are numerous commercial applications – although not all of them are obvious. In America many academic research departments supplement their income by supplying realistic robotic hardware to the movie industry – films like *Robocop* and *Short Circuit* for instance."

Dr Mowforth said that the sort of technology which might interest the toy industry could also be vastly scaled up: "A colleague of mine is working on large scale robots that could give rides to children in theme parks, and museums are

keen to have moving rather than static exhibits – so robots could help here."

"Governments are more interested in using robots in dangerous or hostile environments such as in bomb disposal and the nuclear industry. The Japanese even use them for fire fighting."

"But these are only a few applications. Advanced robotics is still a very new subject; we're dealing with machines with sensors and on-board intelligence. In 20 years there will be many more outlets for this kind of technology."

Pompey goes for gold

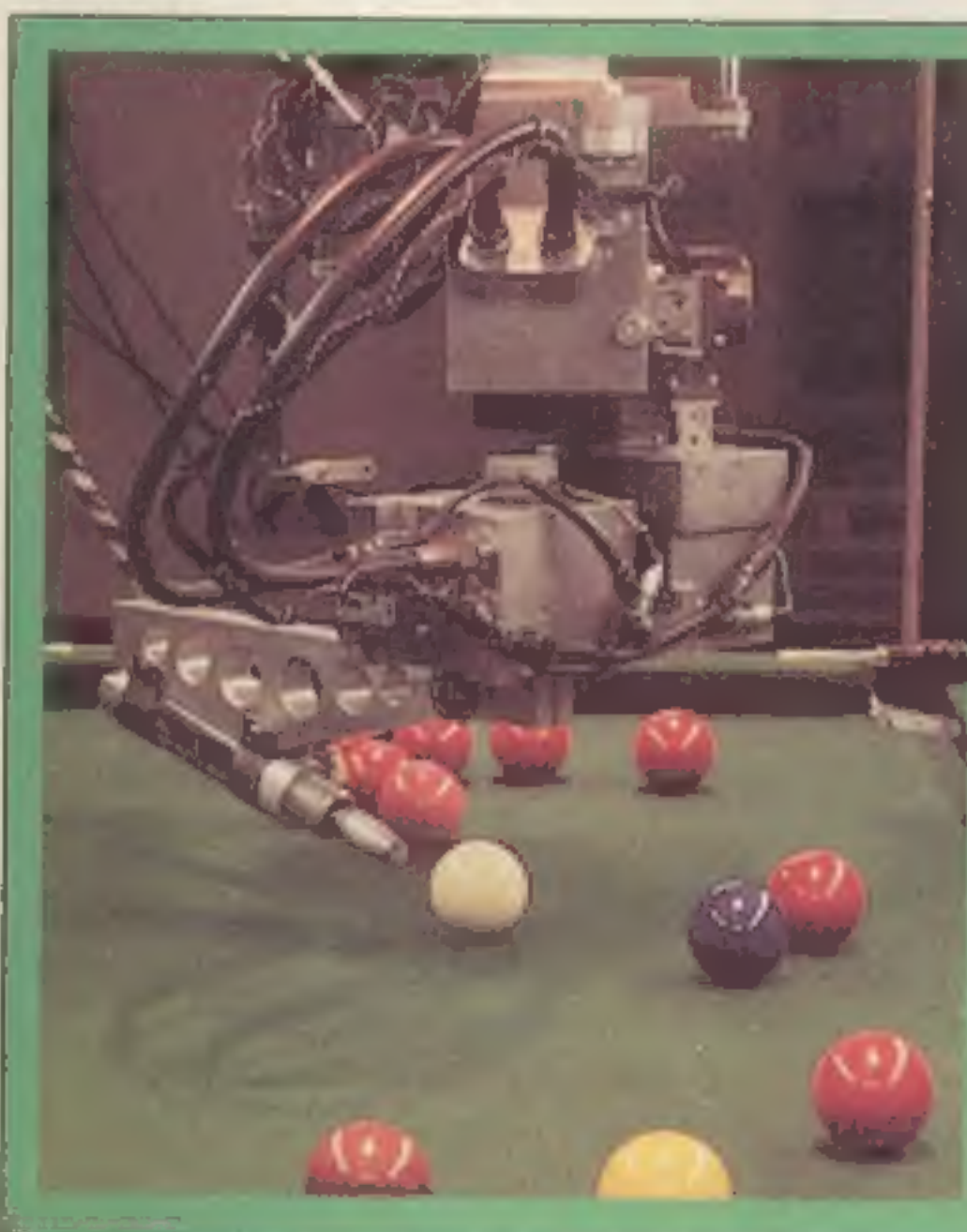
When told about the forthcoming Robot Olympics, Arthur Collie of Portsmouth Polytechnic's Department of Systems Engineering was delighted. "I've got two I can enter!" he exclaimed.

One, Robug 2, has four arms, three suckers on its belly and was recently seen on *Tomorrow's World* climbing up a vertical surface like a mechanical spider.

The other, Zigzag, is even more revolutionary. It uses an NAC 78310 single chip micro with an 8-bit data bus but an internal 16-bit maths processor, much like the PC's 8088 chip. By combining this computer with pneumatics, Collie and his colleagues have proved that it is possible to build a completely mobile machine with just one 'muscle'.

"Zigzag can climb almost vertical smooth surfaces using a the kind of 'parallel rules' device with which you calculate your position when sailing. It is elegant, simple, very cheap, very powerful and has a very high power-to-weight ratio."

"We have already had some serious inquiries from commercial interests, but I can't talk about that yet."



Chalk up

Sadly, Robopot, the world's only snooker-playing robot and as such a certainty for a gold medal, is unable to enter.

Robopot was designed and built at Bristol University's Department of Mechanical Engineering and once lost a close game to Steve Davis – although experts felt the machine won on charisma.

A spokesman for the department, Mr Koorosh Khodabandehloo, explained, "Our machine is actually built around a snooker table. It would cost around £10,000 to disassemble, transport and re-erect it in Glasgow."

The video disco comes home

The revolutionary Bit-Bopper system featured way back in *Express 41* and to be shown on tonight's (Thursday's) *Tomorrow's World*, will be made available for home computers.

Developed over two years by British company Tecnation Digital Atmosphere, the Bit-Bopper is a sophisticated interactive entertainment system combining a sound-to light converter, video digitiser and screen effects software.

The professional version features three Archimedes, a Sony erasable optical disk, and custom video sampling hardware, and is capable of driving video walls,

lasers and light shows. Top discos and nightclubs around the world are lining up to purchase the system which costs over £40,000.

But Tecnation is in negotiation with leading hardware manufacturers to supply cut-down home versions for the Amiga, ST, PC, CPC, C64 and Spectrum.

The units will be pyramid-shaped and offer state-of-the-art 3D graphics and digitised video handling that can be easily synchronised with music or speech from any audio source.

An Amiga version is expected by Christmas and will sell for as little as £50.



• Bit-Bopper: coming to every machine soon.

Helping hand for deaf-blind

The American Veterans Administration has developed a computer-controlled mechanical hand that allows people who are both deaf and blind to communicate more easily.

The hand, called Dexter, can be used to send and receive tactile messages using a one-handed finger-spelling alphabet that is already widely used by deaf people.

Controlled using a keyboard and computer, the hand has a microprocessor to translate messages into control signals. The fingers are then flexed by low-cost servo motors normally used for radio-controlled models.

Dexter can be hooked up to any PC and it is hoped that deaf-blind people will soon have to depend less on human interpreters. In fact, when combined with a Telecommunications Device for the Deaf (TDD) for telephone calls, and a computer for data access, Dexter could provide employment opportunities not previously available to the deaf-blind.

The Veterans Administration is currently looking for a private company or group to develop Dexter commercially. The group anticipates that a portable version could cost less than \$500 (£300) if manufactured in quantity. ■

Learning Japanese

Japanese firms operating overseas are to give away Compact Disc Interactive systems to schools in the host countries. Mitsubishi will sell the CD-I systems to the firms who will donate them to local schools.

The systems combine high quality sound, text, still images, full motion video and computer graphics on a 5-inch optical disk. Mitsubishi believes that the gesture of goodwill will help reduce the tension between Japan and its trading partners.

The company is also attempting to establish an association dedicated to supporting Japanese language training overseas to swell the present five million or so non-Japanese students of the language. Sony has already pledged support, although responses are still awaited from the other two major CD-I developers Philips and Matsushita.

The giveaway CD-I sets will be distributed from September 1991, and Mitsubishi expects to sell 50,000 sets in five years. Cost per set to participating companies will be 200,000 yen - around £800. ■

High-res laser

UK firm Headway has launched a PostScript laser printer which produces a 400DPI image and can be upgraded to 800 x 400DPI with the addition of a card. More information from Headway on 0252 333575.

• An upgrade to make the Hewlett Packard Laserjet III into an Apple-compatible PostScript printer could start a laser war. An HP Laserjet III with the upgrade will cost £3,000 which is about £1,500 cheaper than Apple's printer. ■



Empire's hat trick

Empire is climbing onto the football bandwagon and releasing a 'World Cup Year '90' compilation in association with Shoot! magazine.

There are two basic packages containing three popular games - including the multiple award winning Kick Off (above). The 16-bit pack also includes Tracksuit Manager (right) and International Soccer, while the 8-bit offering replaces International Soccer with Gary Lineker's Hot Shot.

Each pack also contains a colour wall chart with a history of the World Cup and some 'amazing facts and figures'. Cassettes for C64, Amstrad CPC and Spectrum are £12.99 each, while disks are £17.99. Amiga and ST packs will cost £24.99. ■



Database firm fingers unregistered students

COUNCIL COMPUTERS ON POLL TAX HUNT

Computers are helping to track down poll tax evading students with Student Register, a geographical database from information specialist Hoskyns.

Hoskyns acts as agent for the councils and collects student data from academic registrars. This is collated, and details of students living in a council's area are sold to the authority. The council can then update its community charge register and trawl for students who might otherwise have been missed.

Ealing Borough Council in west London is one of the first to use the service. Like a lot of metropolitan areas, Ealing's situation is confused by the fact that students may be enrolled at colleges anywhere in Greater London or even adjoining counties.

This system allows the council to identify which students are in its catch-

ment without having to contact each of the 200 or higher educational establishments within a 50 mile radius.

Louise Raisey, spokeswoman for Ealing Borough Council, said: "Hoskyns act as our agent. They get all the information from college registrars and sort it into geographical areas. We then get a list of the registered students living in Ealing."

Hoskyns is enthusiastic about the service. A spokesman said: "We're acting as a clearing house on behalf of a third of the London boroughs and we're expanding outwards. We collect, collate, analyse and distribute the data. Our clients can have hard copy or tape or we can send it to them direct via Telecom Gold." He added that Hoskyns' postcode-based data search was accurate right down to the individual front door, and would provide councils with definitive information.

The National Union of Students has expressed concern that information about students is passing unnecessarily through a third party, but concedes that it is quite legal and legitimate.

Tim Walker, NUS Press Officer, said: "There was a similar package a year ago. It looks like companies are jumping on the gravy train, as the information is freely available to the councils from the colleges anyway."

When asked if computer literate students might access computers and alter their details to avoid registration, he pointed out that administration records would not normally be on a college mainframe and said: "It's about as likely as a student accessing the computer to change their grades. Possible, but there's no evidence."

Interested councils should contact Hoskyns on 071-735 0800. ■



• Simulate a real Ford Sierra Cosworth with Q8 Team Ford Rally.

Take a spin in a Sierra

A three-stage spin in a turbo Cosworth is the theme of Q8 Team Ford Rally. The 50 frames per second vector graphic game takes you through tree-lined forests, up against other cars and night driving conditions.

A reverse gear is included, and if you are foolish enough to tear around the public highways the police will give chase.

It will be released shortly by Thalamus on Amiga, ST, PC, Spectrum, SAM Coupé, Commodore 64 and CPC. Thalamus is on 0734 817261. ■

Mephisto chalks up exhibition win over Karpov

EX-CHAMP FALLS TO CHESS COMPUTER

British chess programmer Richard Lang took on the world and won when his 50K assembler program Mephisto beat the former world champion Anatoly Karpov at a display in Munich.

The program is the heart of the German Mephisto-Portrose chess computer which is driven by a 68030 chip and has 2Mb of RAM.

Karpov took on 24 opponents including the micro, and the computer was the only one to beat him. Lang was elated and said: "It's fantastic". He said that the triumph was the culmination of nine years of chess programming. And the future? "The next challenge is beating a world champion in a one-to-one match," he said.

Although Mephisto shares the same processor family with the Amiga, Mac and

ST, there are no plans to port the program to any other machines.

Mephisto-Portrose is a dedicated chess computer and is available in various models priced from £995. More information from the importer, Countrywide Computing, on 0353 740323.

Oddly, Mephisto is no longer the World Micro Computer Chess Champion. It held the title from 1984 until being beaten at last year's Computer Olympiad in London by Rebel, a 6502-based entrant programmed by Holland's Ed Schroeder.

This year's Olympiad takes place on August 15-21 at Queen Mary and Westfield College, London University, in Mile End Road.

As well as chess, the games of crib, bridge, backgammon and dominos are among the 16 challenges involved.



• Mephisto losing to Rebel last year.

Details on attending or competing can be obtained from Don Beal on 071-624 5551. Fax 071-372 3266.

Printing out at a distance

Action Computers has designed the Nighthawk Easy-Switch - an auto-setting data switch that allows serial and parallel peripherals such as modems and printers to be shared by remote users.

Designed and built in the UK, the switch accepts serial data from computers, sets itself to the correct parameters (baud rates, parity, etc), and provides simultaneous serial and parallel outputs to feed shared hardware with the correct form of signal.

Parallel data transmission involves heavy multi-core cables and is limited to no more than about 10 metres. Serial data, however, can be easily transmitted for up to a kilometre or more with relatively inexpensive cabling, so the Easy-Switch can be used for sharing printers distributed over a large area.

The four-input version costs £139.50; the eight-input version, £185.00.

Call Action on 0800 333 333 for more information.

MARVELLOUS MODEM



The Hayes Ultra 96 modem will be available in the UK next month, and while not many home enthusiasts will be able to afford the £1,200 price tag, it will certainly cause a few tongues to hang out in the comms world.

In short it will do everything you want, from logging on to a simple scrolling system to running a fully-blown commercial on-line service, and with 9,600-baud data transfer will probably pay for itself quite quickly. More from Hayes on 081-848 1858.

Fujitsu aims at education with video card

Fujitsu is offering an add-on card that allows a teacher to send video images on their screen to students' monitors via a network.

The FM60-138 card has been announced as part of an educational initiative. The company is also modifying its FMR and FM Towns computer series with an eye to increasing its current 14 per cent share of the Japanese PC market, which has seen a growing demand for educational computers.

The new FM Towns comes in two

models, both offering two floppy drives and a CD-ROM drive as standard. The S1 costs 338,000 yen (£1,300) and has 1Mb of memory, and the S2, with 2Mb, weighs in at 378,000 yen (£1,450) - both can be expanded to 6Mb.

The FM60-138 card connects the new machines with Fujitsu's own LAN, DSLINK-Micro, and costs 120,000 yen (£460).

Fujitsu has yet to announce when these will be available in the UK, although a decision is expected soon.



• FM-Towns: modifications in store.

IBM plans Playstation

Industry pundits in America are predicting that IBM will shortly be launching a home micro, possibly with an integrated TV and Compact Disc player.

Jim Hansel of Chase Investors wouldn't be drawn on IBM's plans but said: "Examine the habits of students going to college. They take with them a stereo, TV and computer. There's no reason for squeezing two screens, storage devices etc into a small dormitory room. They should be integrated."

Other star-gazers say that IBM could re-enter the home-computer market with a \$750 80286-based machine with a 30Mb hard drive and the graphical interface Microsoft Windows.

Big Blue's last sortie into the home market was the ill-fated PCjr which made a 12 month appearance between 1984 and 1985.

Cut price Apples

Apple has cut the US price of its portable Macintosh only days after the announcement that another portable which 'borrows' Macintosh ROMs is about to be launched.

The Outbound laptop is two-thirds the price (\$2,999) and two-thirds of the weight of Apple's portable. It will complement an SE or Mac Plus.

The chips are transferred to the laptop and both machines can run on the same ROMs when 'docked'. Outbound claims that together they can function as one machine with twice the processing speed, combined memory and disk storage and two usable screens. When the Outbound is disconnected it becomes a fully functioned portable Mac.

An Outbound spokesman said: "Apple hasn't blessed the product, but they haven't stood in the way of it reaching the market."

Apple has hacked \$1,000 off the US price of its Macintosh Portable and reduced the 1Mb upgrade by \$150.

The price for the 40Mb portable is down to \$5,495, but with heavy discounting, dealers say it should be around \$3,950.

A hard disk sized floppy

A 20Mb 3.5-inch floppy drive that can read standard 3.5-inch disks could be standard on some PCs in less than two years.

Dean Knowler of Citizen UK said that work was proceeding to fit the Citizen IFDD 20s in PCs. He added that a 4Mb format would probably catch on first as the market wasn't sure about the reliability of 20Mb floppies.

Student solves snowflake mystery

Robert Pless, a 17-year-old high school student from Silver Spring, Maryland, has won a prestigious national American computer competition - by finally answering the question of why no two snowflakes are alike.

SuperQuest 1989, sponsored by Cornell University, IBM and the National Science Foundation, was designed to find the best mathematical model to run on a supercomputer. Pless's project, which shows how natural forces give snowflakes their characteristic six-sided symmetry, required two weeks of computation on his school's workstation - but took only 35 minutes on the supercomputer.

"That allowed me to keep adding additional terms of natural forces to my model," Pless explained, "the more information I could

add, the more ways I could find out how natural forces affect snowflakes.

"This whole project is about computational science, not computer science. Computer science is the icky stuff of working with computer languages and writing code and all that yucky stuff. Computational science is the fun stuff where you use computers to solve interesting problems."

Pless, who plans to attend college in the autumn - at Cornell University, naturally - seemed surprised by his win. "I kept in touch with other contestants, so I had some idea of what was going on. I thought it was a neat project, but it wasn't something I killed myself over. I didn't put other things aside."

Game infected by Japanese disk-trashing program

STUDENT WAS PAID TO WRITE A VIRUS

A Japanese student has claimed that he was paid 25,000 yen (about £100) to develop a virus that would attack the Sharp X-68000 series of personal computers.

The 17-year-old told a federation of computer clubs in Osaka that he was one of 40 programmers offered money, and that many were working on the viruses.

A man claiming to represent a major electronics maker in Tokyo allegedly contacted the programmers through a PC network in March 1989.

The as-yet-unnamed electronics firm is denying having anyone on its payroll

matching the student's description of the man.

It is speculated that a virus which has found its way on to the game *Far Side Moon* may relate to the boy's claims. Software house Artdinks is said to be keen to retrieve 3,000 copies of the game which have been shipped carrying a virus which installs itself on the Sharp and is set to erase all disk data once a month from July.

It is one of at least two viruses at large which are programmed to trigger during the summer.

The Osaka federation estimates that

about half of the computers shipped so far are infected. Sharp and the Osaka computer federation are distributing vaccines to existing X-68000 owners and dealers.

The Sharp X-68000 has sold over 95,000 in Japan since its launch in March 1987.

• As *Express* goes to press, the tale has taken a mysterious new twist, with the student now reported by wire services to have "implied his previous talk of a paid job for making destructive computer viruses is fictitious". More details next week. ■

Russians hit by virus plague

Software piracy, rife in the USSR, is causing computer chaos as viruses cripple systems for days.

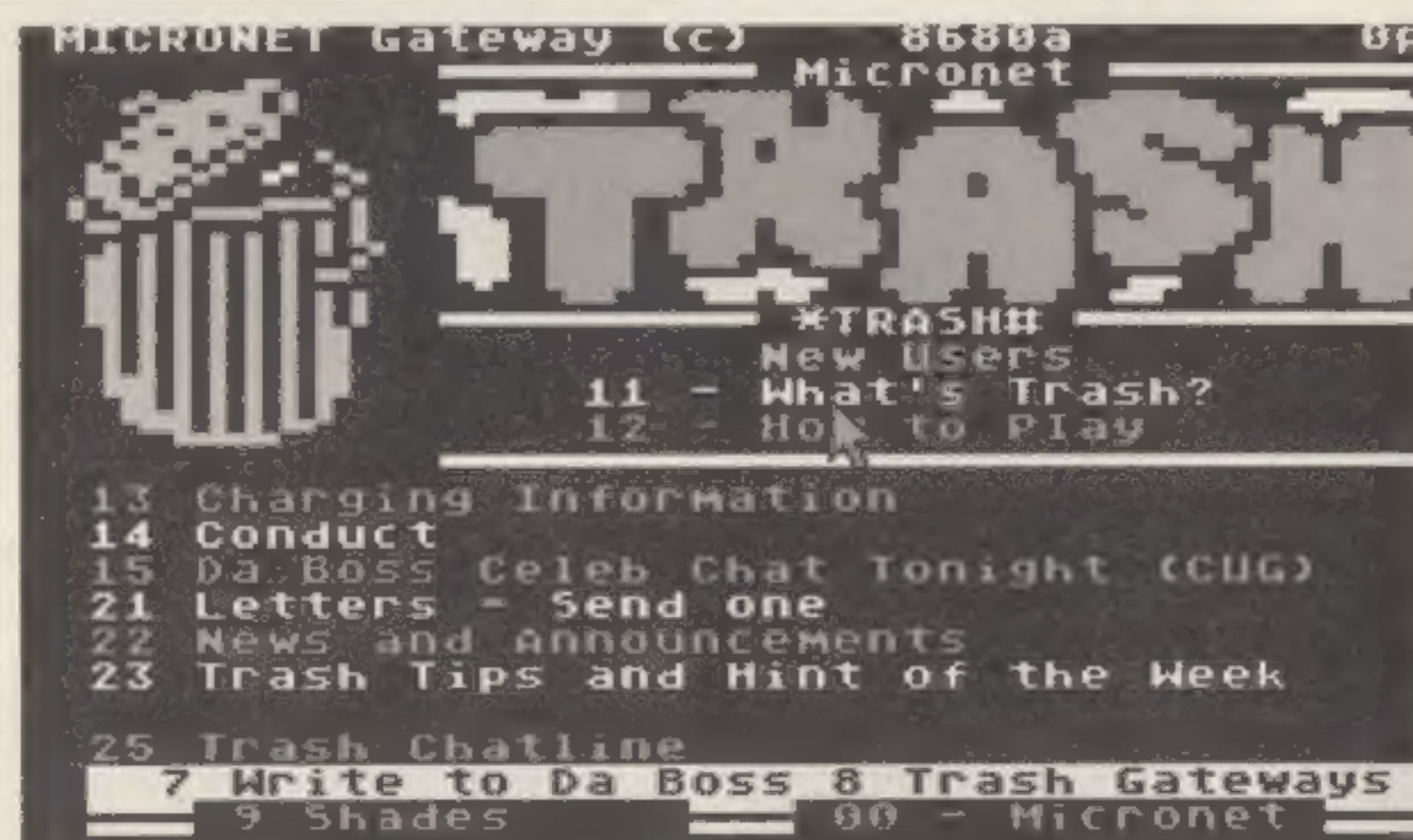
With no legal way of obtaining the software that is needed in the Soviet Union, their only option has been to copy existing programs.

The computer division of the Moscow State building committee spent days 'mopping up' after a virus attacked master booting records. Other computers have been tampered with by nuisance viruses and destructive re-formatters.

As there are currently no laws governing the copyright of software in the Soviet Union, there are no moral or legal problems attached to copying software.

There are moves afoot to protect Western copyrights in the USSR by extending the international copyright agreements, but that is some time off yet.

• Soviet Microsoft distributor Dialogue is trying to take rival Interquadro to court for the illegal distribution of Microsoft products in Russia. ■



• Trash: threats of violence on the on-line games.

Micronet closes chat lines

Micronet users have had their chat lines discontinued for an unlimited period as some callers are under suspicion of having contravened BT regulations.

It is too early to tell whether or not the chat lines, which have now been running for four years, will be re-instituted. ■ British Telecom has just launched an internal investigation into the matter.

Last Friday BT suspended the service after foul language was found in several messages. Other reports tell of members playing the *Shades* multi-user game threatening each other with physical violence. Users are up in arms over the fact that the actions of a few have jeopardised the enjoyment of everyone.

A spokesperson for Micronet was unable to confirm why they had been discontinued. ■

Soviets launch PC clone

A Soviet PC clone due for introduction in May is based almost entirely on locally patented ideas.

The lack of Western currency prevented the import of standard PC parts, so where possible, the parts were made in the Soviet Union.

This has left the Iskra-4816, an XT clone, with non-standard connectors - tying users to home-grown peripherals.

Disk drives and colour monitors weren't available in the USSR and have had to be imported, leading the newspaper *Izvestia* to surmise that the lack of Western currency may cause a spares shortage. ■

Genes on disk

The detailed genetic structure of thousands of people is now freely available to anyone with a PC or Macintosh.

The US National Institute of Health has thrown open the Genetic Sequence Data Bank (Gen Bank), and for the price of a disk can supply information hitherto only in the realms of the scientific and academic world.

Gen Bank was founded to provide a computer database of all known deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) sequences. DNA is a complex molecule produced by cells and viruses and forms the building block of life, and DNA sequences could one day be used in cloning experiments.

For access to the Gen Bank network phone 0101 415 962 7364. ■

Would you stomach it?

A national computerised registration scheme is being created, following the efforts of the Cambridge-based Conservation Research Group. It has come up with a novel way of identifying... tortoises.

Despite the macho image of the Teenage Mutant Ninja Turtles it seems that the humble Mediterranean tortoise is an endangered species (importing them to Britain has been banned since 1984), and even the home-grown ones have been known to go astray. Now the British Chelonia Group - who represent the interests of Britain's 1,500 lovers of tortoises, turtles and terrapins - has decided to adopt a new identification technique.

Although other animals can be tagged with a microchip implanted beneath the skin, this is not feasible with our carapaced friends. However Drs Oliphant Jackson and Lex Hiby at CRG have discovered that the underside of each tortoise is unique, rather like a fingerprint or retina pattern.

Now a national database can be set up featuring digitised scans of the underside of tortoises, so that Customs and Excise can tell whether they are being illegally imported. ■

COMMENT

The Robot Olympics cannot fail to catch the imagination – let's hope that the Government feels the same way and funds Britain's projects

If there is anyone out there whose imagination is not inspired by the thought of the world's first robot 'Olympic' games, one suspects they must be a very cheerless person indeed.

Here at *Express* we are not ashamed to say we have had many a giggle musing on the potential of the event and dredging up some pretty dreadful puns in the process.

Is MIT's aquatic creation a 'rowbot', we wondered; does the bipedal motion race count as 'artificial sprintelligence'? Will there be half-track and field events?

What will turn out to be the android equivalent of the steroids scandals? Will we see future gold medal winners stripped of their titles after they are discovered to have been taking illegal maths co-processors?

And what will pass for a sex-test among the cyber competitors is something which defies speculation.

Robots, when they are not supposed to be scaring the hell out of us in sci-fi horror movies, do often have something of an amusing air to them.

Try to call a robotics story to mind and you may well end up musing on the android waiter whose head fell off into an Edinburgh restaurant diner's lap; or the Japanese-designed 'intelligent' car, equipped with a plethora of sensory devices which were supposed to enable it to follow the footpath through a park – naturally enough, once switched on it

immediately scuttled to the nearest tree and tried to climb it.

But there is more to Glasgow's forthcoming Robot Olympics than meets the funny bone. Like the giant walk-through computer in Boston, it is a thoroughly commendable initiative because it is a fun dressing for what is, when all is said and done, a perfectly serious research project.

The ostensibly competitive nature of the event is an entertaining platform for developers from around the world to show off some of their weird and wonderful creations, but doubtless the real business will be in comparing notes and in attracting interest from a variety of commercial enterprises.

Not least, it will also be a chance for British universities and polytechnics to impress on governmental bodies not only that current state funding (where it exists) is money well spent, but that additional support might help put the country in a prominent place on the world power map of such technology.

The Turing Institute's Dr Peter Mowforth points out in our news story that past governments' short-sightedness drove Britain from being a centre of excellence in the development of artificial intelligence to the status of a comparative backwater.

If the robot games contributes at all to the present reversal in that trend, the event should prove to have been well worth the effort of staging it. ■

What will pass for a sex-test among the cyber competitors is something which defies speculation...

FROM The ARCHIVE

ONE YEAR AGO

Normally parsimonious Apple gave away £750,000 worth of Macintosh machines to schools in Scotland and Northern Ireland. The giveaway, designed to give kids the advantage of the Mac's simplicity, was Apple's first thrust toward the UK educational market.

Locomotive Software announced the PC version of LocoScript and promised to have it on the shelves by September, 1989. It arrived in May 1990.

and six games, and cost £149 and £199 respectively.

Taiwanese clone maker Mitac claimed that by the end of 1990 it would be making a PC every 14 seconds.

Atari changed the Folio pocket PC to the Portfolio after it was revealed that someone had already registered the trade name.

It seems that Atari thinks up a name and christens a product. If no-one objects, it remains, if they do, it changes. This is cheaper than checking first.

TWO YEARS AGO

Commodore slashed £200 from its PC1 then claimed to have the cheapest IBM clone on the market. The PC1 came down from £499 excluding VAT to £369 including VAT. An integrated software package was added to make it better value.

Commodore is still trying to push its PC range with a current TV campaign and training bundle.

Despite mediocre gameplay and a pedantic parser, the Jeffrey Archer licence *Not a Penny More, Not a Penny Less* continued to sell and made its debut on the BBC B just under two years before it made its TV debut as a mini series.

LOCOSCRIPT PC: IT'S A CERT...

Million selling word processor for PC owner

The long awaited PC version of Locomotive's massively popular LocoScript word processing package is to be unveiled next September.

Producers have been anxiously working on the enormous project for the past 18 months. It all goes to prove that time taken to create a finished package is time for the PC Show in South Court on September 22nd.

• LocoScript PC: "out in September" a year ago.

A *Sunday Times* investigation found that children as young as eleven were able to download porn from bulletin boards. A government investigation with a view to outlawing the porn was promised but a year later there is no sign of the promised stiff legislation.

Amstrad hopped on the bundling bandwagon with a pair of Spectrum deals. The Plus 2 and Plus 3 packages contained computer, light gun, joystick

Desktop publishing firm AMS brought out DTP Solutions, a series of packages for the PC that covered all or some of the DTP functions as required.

The problem of clip art for DTP was solved with the top-end solution that included a hand scanner with the *Finesse* DTP program and a mouse.

Sources: *New Computer Express*, *Computer Trade Weekly*, *MicroScope*, *Computer Talk*.

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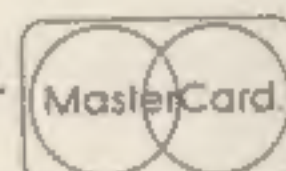
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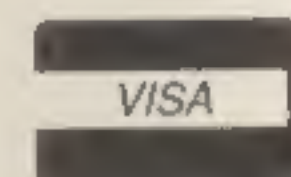
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CPC

RAINBOW SHINES

After the brilliant *X-Out*, you'd have thought that Rainbow Arts would have been content to rest on its laurels for a while. Not so. Only weeks after the underwater shoot out that set new standards for graphics and gameplay, comes *Turrican*, a platform blast-'em-up which sets you, the hero, against the combined forces of evil.

Turrican himself is a chromium-plated hero equipped with the latest weaponry, but his foes are culled from the worst monsters and demons of earth's mythical past. Head of these assembled nasties is the evil demigod Morgul, and it's *Turrican*'s job to search him out – and then wipe him out.

All this won't be easy, though, because Morgul has built a nigh-on impenetrable fortress on a bleak, industrial world. To get at him, *Turrican* has to battle through that one and four others. Needless to say, as *Turrican* advances, the baddies get tougher.

Level One takes place in a desert world, and through a series of caverns below. Straight away you find out this is going to be no picnic, as a huge, disembodied hammerfist tries to flatten you out of existence. You also find that even though there is a correct route to the next world (apart from the obvious), you've got to search for it. That's right – apart from holding your own against the combined forces of Morgul, you've got to find the right route...

If *Turrican* offers that little bit more than the average shoot-'em-up in terms of scale, graphics and gameplay, it also has that old chestnut collectable weapons. Some of the monsters you annihilate along the way will leave coloured jewels behind. Collecting these gives you power-ups of ever-increasing destructiveness. They include a pulse laser which grows in power and range as you collect the jewels and – best of all – a laser whip which can be swept around full-circle, wiping out anything and everything it touches.

To be honest, *Turrican* adds little new to the world of shoot-'em-ups. But, like *X-Out*, it raises standards of gameplay and graphics at a stroke. It looks fantastic, it plays like a demon and will keep hardened joystick bashers glued to their screens for weeks. Price is £9.99 on cassette, £14.99 on disk. Look out for it.

WILD MAN OF WITHERNSEA

David Wild, of DW Software, is really making a name for himself on the PD scene. The sheer amount of software he's written simply defies belief. The latest tasty piece of code to emerge from his production line is an excellent little hacking utility.

Hack acts as a memory-resident background application. It provides a whole set of extensions to CPC BASIC which let you get inside and tinker with any bit of code you care to imagine.

There are 17 commands in all, each accessed with the I key (ICHEATFIND, IHELP etc), one of the most useful of which is a little command which looks for lives being decremented in a routine...

David Wild's address is 62 Las-

celles Avenue, Withernsea, North Humberside HU19 2EB. Send £6 and you'll get a disk back bulging with David's own PD software.

ALL-FORMAT TRANSFER

PCW-World is the Amstrad PCW's largest independent user group, it says here, and is now offering a disk format translation service for owners of 3-inch drive Amstrad machines.

For £5.95 it will transfer data from your 3-inch disk to any one of 500 different formats. (Are there that many?) These formats include Apple Macintosh MFS and HFS, Apple II, Amstrad & IBM PCs (all models using 5.25-inch 360K/1.2Mb and 3.5-inch 720K/1.4Mb formats), Apricot, Atari ST, BBC, Kaypro, Einstein, Microbee, RM Nimbus, Sanyo, Superbrain... yes, well, I think we get the picture.

That £5.95 may sound a tad steep, but it does include VAT, destination disk, post, packing and insurance – and PCW-World reckons its service costs about half the going rate. It also reckons that most transfers can be accomplished by return of post.

Now don't let the fact that it is a PCW company put you off. PCWs can quite happily read 178K CPC data disks (or at least my PCW8256 can), so PCW-World should be able to sort out any disk transfer requirements you might conceivably have.

If you are interested, the address you want is PCW-World, Cotswold House, Cradley Heath, Warley, West Midlands B64 7NF. Or, if you've got some utterly bizarre requirement you want to discuss first (like swapping data to a Spectrum – well, it could happen), call 0384 66269.

TRASH FROM MICRONET

Thanks to a deal between British Telecom and Third Millennium Systems, Micronet and Prestel users have now got a new game to play – and it's *Trash*. No, really that's what it's called. It's a new environment-friendly game where subscribers play the part of Pan-Dimensional Refuse Disposal Officers. Your job is to solve various tricky puzzles by means of your native wit and psionic powers in a bid to achieve the coveted title of 'Lord' or 'Lady'.

Micronet users pay 2p/minute off-peak and 8p/minute (peak), while Prestel users must cough up 6p/12p. Anyone else who wants to have a go must pay the usual bloodsucking 25p/38p for the privilege, and should call 0898 100890.

THAT'S ENOUGH POKES - ED

Paul Whitton, P Watkins, David Melville, Jody Elston, Lee Mills, and Graham Shaw send in the following:

- *Jinks*: Press ESC to replay the level you died on.
- *Bedlam*: Press COPY on the title screen to restart the level you died on.
- *Super Stunt Bike Simulator*: Press TAB to go to the next level.
- *The Real Ghostbusters*: Press the keys C H E A T at any time during play and you will go to the next level and get infinite lives.

Rod Lawton



BBC

PROGNOSTICS

Last week I made the prediction that Acorn would unveil no surprises in the *Which Computer?* Show and I am happy to report that I was right.

Not surprisingly there were no Master 128s present either, at least that I could see – my vision being obstructed by the hordes attempting to get a look at the tasty Arc software.

Furthermore, Next Technology was showing off its CD-ROM, or at least appeared to be. My information is that the product does not exist, yet.

And I would like to go on record first for asking: How about a Master 128-compatible version? I give my personal guarantee it would sell more units and, in the resources involved, would be easier to collect.

Schools, colleges and LEAs would be certain customers. As a medium for distributing software, it would be a brilliant solution for educational software publishers. Just imagine, all your software needs on one compact, secure, easily manageable disk. Perfect!

THE LONG AND THE SHORT

One educational publisher that would be in a position to take advantage is Longman-Logotron (L-L) which, of course, now handles the BBC software range as I reported last week.

After my talk with Jenny Allen from the BBC, I received a phone call from the MD of Longman-Logotron, Christopher Roper. He was able to allay most of my fears about the future of the BBC Software name, without really giving away too much about L-L's plans.

He pointed out that the partnership with the BBC was a 50-50 one, both being committed to the present range, and new software.

He also added the comment that Logotron was taken over by Longman, which had been unsuccessful, because of Logotron's record as a profitable enterprise. New software from L-L may still be some way off, however.

A BIT OF QUIET

We are now running into a quiet time of year for computers and computer games in particular. I have, though, just received the latest in the Play it again, Sam series – number 13.

If you think that 13 is an unlucky number, you're right. This release – *Pandemonium* – is in my opinion, not up to the standard set by others in the series. Firstly, *Hyperball*, which is a version of *Breakout*, or *Arkanoid* if you prefer.

Superior has made the fatal mistake here of mucking around with the original gameplay; the opening screen is too difficult and I don't like the delay after each lost life. There are some nice touches though.

Pandemonium is an early (1985) Peter Scott platform-and-ladders game and, quite frankly, it's not one of his best.

Percy Penguin is an even earlier (1984) Repton-type game. *Barbarian II* is, of course, worth every penny, but it has only recently been on general release, which is very strange in and of itself.

So, in conclusion, a better package would have been the dynamic duo *Barbarian I* and *II* together.

Andrew Brown

YOUR FORMAT

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SPECTRUM

FROM OCEAN FOR YOU

You might be a bit reluctant to splash any cash on new Spectrum software. Well, the good news is that Ocean has decided to release one of the best Speccy games ever for the miniscule sum of £2.99 – so there's absolutely no excuse for casting your Speccy into the cupboard for the summer.

I'm talking about *Arkanoid* – a supremely addictive re-invention of the good old hit-the-ball-against-the-coloured-bricks type game that spawned shelf-loads of imitators when it first came out. It's a simple idea but totally compulsive to play and the Speccy *Arkanoid* was probably the best version written, even if I do say so myself. It is, if anything is, essential playing.

MIKTOR RE-WORK

My old pal Miktor has just informed me that one of his pokes was rendered inoperative recently due to my lethally dodgy typing. So, if you dutifully tapped out the Italian *Stuntcar* poke in *Express* only got infinite amounts of frustration in return it's because the first poke should have read 201 not 210. I do apologise to everyone and all!

MAKING THE ROUNDS

Prospective publisher M Herring wants some advice on the new Speccy fanzine he and a few pals are planning.

The premier edition of *Crystal*, as it is to be known, is due out soon and M wants to find out 'where one comes across games to review before they even come out on general sale?'

Unfortunately, generally speaking, you can't and as the long term contributor to the brilliant *Spectacular* fanzine (25p and SAE from Rich Pelley, 32 Abbey Road, W-O-T, Bristol BS9 3QW), I should know.

The fact is most largish software companies are too mean and miserly to support even the very best fanzines. Smaller, back bedroom operations are much more likely bets, however, so try contacting them.

Apart from this sage tidbit, I haven't got much more advice other than to say it's a case of having to buy your games in the shops like normal people – so I'd look to gold or securities dealing rather than fanzine editing if you want to make any money. Still, for the sheer enjoyment, fanzine editing is equal to none. Send me a copy of the first issue!

Robin Alway

CHEATING TIME

An envelope packed to the flaps with loads of cheats has just been sent in by Ronni Sterling of Glasgow, who has decided to divulge them all before he flogs his Plus 3 and invests in a Coupé. Spectrum owners the world over, or the ones reading this at any rate, should be grateful to Ronni for the following:

Chase HQ – press S, define keys, type 'SHOCKED' and then press [Enter].

New Zealand Story – on the title screen, type FLUFFY PHILIP (with space) for lasers and lives.

Star Pilot – enter your name as TOASTIE on the high score table

Ghost Hunters – select 'View Map' option and type GHOST and any other key for the screen you want.

Star Farce – define keys as T,R,O,N,I,C

The Untouchables – enter your name as HUMPHREY BOGART in the high score table and then hold down Q,W and E to skip a level.

Xenon – press pause and type TINY.

SAM COUPE

FEATURING SAM

This week's quota of eternal gratefulness goes to Kenny Anderson of Dunfermline, who has written in to let us know about a useful feature of SAM.

Kenny reckons that 'if your hi-fi has a high-speed dubbing switch you can use it to load in some games at high speed'.

So, for those Coupéarians out there rich and up-to-date enough to own such equipment, try the following and save hours of precious time: 'remove all cassettes from the unit and insert the game/code into the playback deck. Open the other cassette deck which records and look about inside it for the write protect tab (the small lever which prevents recording over tapes if the little tab on the top of the tape has been broken off) which is usually positioned to the top right or left. Hold it down and press the Record but-

ton. Make sure the high-speed dubbing switch is on and press Play on the playback deck. The playback tape will start at high speed. The Coupé can detect this high-speed playback and adjust its loading accordingly.'

And there you have it, games loaded before you can say: 'why hasn't my Amstrad Tower System got high-speed dubbing?'

AND FROM COUPÉ

Thought I'd better give you a quick reminder about the Coupé competition. If you fancy a free piece of mystery SAM software write and tell me who wrote SAM's excellent BASIC.

Answers to arrive by May 24, and to be sent to Robin Alway, at the Easy Peasy Competition, *New Computer Express*, 30 Monmouth Street, Bath BA1 2AP.

Robin Alway

PCW

CALLED TO ACCOUNT - 1

Unlike the ozone layer, accounts packages for the PCW are not thin on the ground – or in the air for that matter.

SD Micros is near to completing a new one, said to be easy to use but powerful and inexpensive. It'll have to be good to compete with the big business programs (such as *Sage Accounts*, £87, 091-2131 555 and the many packages for the small business or householder (*Money Manager* being the usual favourite, £50 from 081-743 9792). However, the new arrival sounds promising. Details when they come.

CALLED TO ACCOUNT - 2

Talking of accounts, D Staveley of Bath tells me his small, spare-time business was told by the Inland Revenue to get the accounts approved by a firm of recognized accountants.

The accountants basically checked the figures that he'd already prepared, which must have taken well over 10 minutes, and then produced two pages of 'boilerplated' (i.e. stock phrases already stored on disk run together) draft quality PCW printout, which must have taken five minutes, maybe more.

The cost? £850. When he queried this he was told the charge was 'not expensive considering the amount of computer technology involved'. For £850 you can just about buy two new PCWs.

AD NAUSEAM

Seen the miserable ads for the Brother word processor recently? Under the headline 'It's a mystery' it asks: 'Why are elephants afraid of mice?'; 'Where does belly button fluff come from?'; 'How do seedless grapes reproduce?'; and 'Why do people think word processors must cost loads of money?'; implying that Brother is an extraordinary bargain.

PCW owners will not be fooled. Elephants are not particularly afraid of mice and tend to tread on them. The methods of propagation of navel fluff and seedless grapes are obvious. And the Brother word processor costs £473.85 for 48K of memory and no disk drive.

BLOCKS TO THAT

Blocks in *LocoScript* are a handy way to move pieces of text from one document to another. Suppose you want to move a paragraph from NOTES to CHAPTER.1.

1. Edit NOTES and go to the beginning of the section to be copied. Press [Copy].

2. Move to the end of the section to be copied. Press [Copy] again if you want it to remain in NOTES, or [Cut] if you want it to be removed from NOTES.

3. Give a number from 0 to 9 to name the block. (*LocoScript* 1 only: Now press [F8] and select 'Save block'. You return to the disk manager. Move to an appropriate group to save the block in, press [Enter] and name it.)

4. Carry on editing. You can 'Abandon edit' and the block is still saved.

5. Edit CHAPTER.1. Move to the appropriate point for insertion. *LocoScript* 2: press [Paste] followed by the number you gave the block. *LocoScript* 1: select [F7] 'Insert text' and move the cursor over the block you just named. Press [Enter].

Rob Ainsley

MSX

MORE JOYOUS NEWS

I have just been giving QuickShot's new wireless game controllers (joysticks to the thickies) a good hammering and, at £34.99 a pair, they are expected to be good. Read on to see if any controllers can be worth this sort of money.

Firstly, let's see what £34.99 of joysticks looks like. The QS-127, as it is designated, is actually a three-part system, two hand controllers, and an infra-red receiver that connects to the joystick port of your MSX.

Each hand controller needs four AAA-sized batteries and, at around £2 for a pack of four, and needing two sets, the price of the system is getting on towards £40. Quite a lot of dosh I think you will agree.

The two hand controllers are identical, having an on-off switch, auto-fire, normal fire option and a player 1 or player 2 selector.

As the transmitters are effective up to 20 feet away, there is no getting in each other's way, unless one is being really nasty and stands in front of the opponent's transmitter.

There are two fire buttons on the right of the hand controllers and they work as A and B buttons as required by many MSX games. Directional control is achieved via a small eight-direction thumb control pad, which takes some getting used to.

Now down to brass tacks: how do they perform? In a nutshell, fantastic – how did I ever manage without a wireless controller before?

Just leave your receiver plugged in, switch on the controller, and away you go with some of the meanest blasting this side of the universe. One thing I will admit, the controllers are useless for certain games, eg *Hypersports* and *Yie Ar Kung Fu*. Shoot-'em-ups are their forte and if you are a shoot-'em-up fan, then £34.99 isn't asking too much, is it?

GOLDEN MONTHS

US Gold has not released a full-priced MSX game for many months, so it came as a surprise when a parcel I received contained the game *Moonwalker*. I will pass on more details soon.

Not to be left out, Micro Value sent across two games that retail at £2.99 each: *Wallball*, a breakout type game, and *Attacked*, a shoot-'em-up featuring some excellent wire-frame graphics.

COMPETITION

K-Soft Computers of Retford have been in touch and have kindly donated seven prizes of software to those of you who write in with the answer to this simple question. How many games do K-Soft have under each of the following headings, adventures, games and utilities.

The answers are available if you obtain the K-Soft catalogue so, if you want to win a prize, I suggest you write pronto to K-Soft Computers, 1 Stanley Road, Retford, Notts DN22 7AE.

The seven lucky winners can pick software of their choice from the K-Soft list so, with your entry, name the software you would like to win and send them to K-Soft at the above address. Closing date for the competition will be two months from this publication.

Keith Neal

C64

FINGERS DO THE SOLVING

Many years ago, or in *Express* 52 to be precise, I mentioned a little something called the Guiding Light Adventure Helpline. Mighty oaks from little acorns grow (perhaps the Archimedes should have been called the Oak - BBC Computer joke for you there), and the GLAH now receives hundreds of calls every week from frustrated adventurers.

Remembering that telephone calls cost 25 pence per minute off-peak and 38 pence per minute at peak times, the number to dial is 0898 338933.

Your query might be answered by founder member Jackie Wright or, as she told me recently (name dropping again, sorry), it could be answered by someone who has just walked into the office and been handed a phone in panic.

Fear not, whoever answers the telephone is knowledgeable about things adventurous, so if you haven't got a clue what to do, then give them a call.

MAGAZINE NEWS

It seems churlish to mention Jackie Wright and then not bother telling you where and why we met.

In *Express* 53 I mentioned to you all an adventure fanzine called *Adventure Probe* and I met Jackie, along with several others (including Ormskirk Grue, who confirmed that Grues drink Newcastle Brown) at a gathering of people who

write for and/or read *Probe*.

It was as much a celebration of the continued success of the fanzine as anything else. The latest issue in front of me ■ Volume 4, Issue 4 and I can think of few other fanzines that have lasted well into their fourth year and are still going strong.

For details or copies of the fanzine at £1.50 ■ piece, write to Mandy Rodrigues ■ 67 Lloyd Street, Llandudno, Gwynedd LL30 2YP. If you have any interest in adventure games at all, then you will not be disappointed.

MORE DISK SPACE

Having just confirmed one of Gerrard's Laws of Computing (look for a file which could be on one of five disks, and you will find it on the reverse side of the fifth disk that you look at), I thought I'd tell you that, years ago, one John Ryan taught me the art of using both sides of a 1541 disk.

Put two disks together face to face, carefully cut matching write-protect notches with a pair of sharp scissors and hey presto! You can use both sides.

I'd advise the use of side two as backup space only, but since that day in the distant past no news of any errors arising from this unorthodox use of disks has ever come my way. And there has been ample opportunity.

AN APOLOGY

What I can't do - owing to lack of space - is give you a few more pokes, but fear not, for they will return next week. Sorry about that.

Pete Gerrard

QL

IN FOCUS

A couple of issues ago I mentioned that *QL World*, along with the other Focus titles, had been purchased by Maxwell.

Indeed, *QL World*, together with the other magazines, has now left the Focus HQ and is sharing premises with Panini Publishing, another part of Maxwell's empire in Goswell Road, London. It, therefore, looks as though the future of the magazine is assured, which will please those readers who have taken out a subscription. The phone number is 071-253 5142, by the way.

BASIC REPORTER

Dilwyn Jones's *BASIC Reporter* is a utility that gives you lots of useful information about a SuperBASIC program: a list of the variable names used in the program, numbers of lines containing a given keyword, which procedure calls which function and where, etc. Programs can also be traced - the line numbers of statements being executed are displayed while the program is running, which is very useful for debugging.

Written in compiled (Turbo) SuperBASIC, the program multi-tasks and can, therefore, be kept in memory and entered when required, by pressing Control C. It is menu-driven and very easy to use. Reports may be listed to the screen, to the printer or to a disk file.

A sizeable SuperBASIC program,

INDENT_BAS, on which the utility can be tested, was supplied. This is a form of 'pretty-printer' for tidying up listings and could be quite useful in its own right.

Good value at £10, *BASIC Reporter* is available from Dilwyn Jones Computing, 41 Bro Emrys, Tal-y-Bont, Bangor, Gwynedd, LL57 3YT. Phone 0248 354023 for more details.

QUANTA SUB-GROUPS

The Essex group has moved to a more accessible location - Rayne Village Hall, Gore Road, Rayne, Essex. Rayne is on the A120 between Great Dunmow and Braintree. Meetings will be held on the second Sunday of each month at 2.30pm. Contact John Mason on 0277 651593 if you have queries.

A new group has been formed for users in central Lancashire, meeting on the first Monday of the month at the Lisieux Hall Social Club, Dawson Lane, Whittle le Woods, Chorley. More information from Steve Hutton, 44 St Mary's Rd, Bamber Bridge, Preston, PR5 6TE.

Andrew Knights would like to hear from users interested in forming a group in the Worthing/Horsham area. Contact him on 0903 812820 after 6pm.

Even if you don't belong to QUANTA, you'll be made very welcome at a sub-group meeting. They are especially useful if you have problems - you will nearly always find someone who can help. A meeting usually includes a formal session (a hardware or software demonstration, for example) followed by an informal get-together.

John Torofex

XE

SEE HOW IT'S DONE

Spreadsheets are fine for tabulating and correlating numerical information, but for most computer enthusiasts, a screen full of numerical spreadsheet cells is just too much!

Wouldn't it be nice if there was way to display the relevant information on screen that would be a breeze to assimilate and easy on the eyes? Well actually, there is. Business graphics, as the graphical display of financial and other numerical information is known, is a method of taking raw data from spreadsheets and databases and using that data to produce pie charts, histograms and other easy-to-understand displays.

Graph-It from the Atari Corporation is a business graphics package that is comprehensive and easy to use. Rather than employ complex keyboard formulae in order to plot information, Atari has plumped for a simple joystick controlled system that anyone can use after five minutes practise.

Using the joystick, you can plot the coordinates for 3-D charts, then overlay information taken from your spreadsheet (such as *VisiCalc* discussed last week) or a database such as the *Home Filing Manager*. The program makes extensive use of colour to highlight the relationships between the various data items and is a must for anyone trying to unravel their end-of-year tax return.

Graph-It costs the very reasonable sum of £4.95 and it is available from Silica Shop, which can be reached on the following digits: 071-580 4839.

Edmund Blake

ARCHIMEDES

APOCALYPSE NOW

The Fourth Dimension, and programmer Gordon Key, haven't been idle over the last few months. Not resting on the laurels of *Holed Out* or *E-Type*, Key has been working on *Apocalypse*, a filled vector graphic planet-based shoot-'em-up, similar to the classic *Tau Ceti*.

The game puts you in command of a surface skimming vehicle called a Llanerk. This high-performance runabout is lowered to the surface of each of a series of planets for you to start your raid. The idea is basically to destroy anything and everything, though as the instructions state '...buildings or objects which shoot at you are more important than those that don't...' - I'll go for that. The ship isn't that easy to control and it takes some practice before you can aim and hit anything which isn't screwed down - and a lot isn't.

Practice is what you have very little time for, though, as flying saucers come at you from all quarters as soon as you touch down. These are all drawn as solid, multi-coloured graphics, moving smoothly and very fast across a landscape littered with buildings, guard towers, radar beacons and assorted armaments.

Explosions are much more visually real than with other games of this ilk and there are witty graphic and audio touches throughout the game. When you're destroyed (there's no point in saying 'if'), a rather cynical 'Guild' assesses your skill and decides whether to issue you ■ new ship.

Apocalypse is a great game, which should keep you playing for many an hour. It further confirms The Fourth Dimension's place as the leading producer of Arc game software.

TEMPEST CLOSE

The *Which Computer?* Show was full of the usual PC stuff, but there were a few Arc goodies to be seen on the Acorn stand. With the accent on computer solutions, the company gave over most of its stand space to third parties, who showed off a variety of different applications. Computer Concepts and Minerva were both represented, as were Silicon Vision, Software Solutions and Clares.

Clares' representative was David Coathupe, the man behind its DTP program, *Tempest*. This is well on the way to completion, with most of it working but a few bits and pieces still to go into the final product.

David was running through some of the useful features of the program, working at lightening speed on an A3000. Either *Tempest* will blow as fast as its namesake or David had a particularly fast hard drive inside the Viglen case on the stand.

The program promises to deliver many goodies, including linked hierarchical frames, so you can group graphics and text and move them around the page as one.

It has a built-in spell-checker and can handle multiple columns within the same frame. Like *Artisan*, it will be possible to disable certain commands,

which is a big help when teaching DTP in schools or colleges.

Clares is hoping for a June launch of *Tempest*. At £129.95, it looks very good indeed.

TINTS AND HIPS

Having passed on Allan Dean's tip on screen grabbing last week, I have to say that it doesn't work on my Arc - an early A310. The screen is saved OK, but the task window isn't removed before the grab, so it's 00000000000000000000 saved on each file.

Am I doing something wrong, or have other readers had the same problem, I wonder?

Another of Allan's tips was to check which re-locatable modules are used by RISCOS applications. These modules are often left in place after the application itself has been closed.

Removing them again reclaims the memory for other uses. For example, *Draw* uses the FPEmulator RM, which takes up 25K. If your remaining active applications don't use it, you can remove the floating point module. To remove an RM, type [Ctrl][Shift][F12], *RMKill <module name>, *RMTidy, *Desktop. This tip even works on my machine.

Allen has a request for some decent sampled voices for *Maestro* and other sound applications. Anyone know of any? All bells and whistles for the Arc, along with notice of any out of the way products are always gratefully received.

Bertrum Carrot



WHICH COMPUTER? BLUES

Like 150,000 other people, I pootied up to Birmingham last week to attend the annual Which Computer? jamboree at the National Exhibition Centre. As usual, three large halls were filled with every PC bit and piece imaginable, usually in several different varieties. Nonetheless, there seems to be less to get excited about on show each year and fewer, but more showy, stands.

The big corporations are getting bigger, more profitable and are tending to swamp the smaller, sometimes more innovative companies that exhibited a couple of years back. The stands are ever more luxurious, with flying hospitality suites pitched above theme-parks of new machines, all firmly stapled down.

Zenith seemed to have taken delivery of a production facility from the planet Zanussi. The carpet alone on this stand was rumoured to have cost around £20,000.

The press office, one of the few perks available at the show, had been split in two and half used by the Communications Show. The Comms Show was being held in other NEC halls at the same time. The half still devoted to Which? seemed to be almost com-

pletely free of journalists; it was filled instead with public relations people and exhibition organisers. This isn't some form of journo-elitism - I don't care if I have to stand at the back for lack of a seat - but it doesn't end there.

Floating round the press office, the PR folk seemed to be on the prowl for unsuspecting journoes to take in hand and lead off, down to the stands of their respective clients. A man with a vested interest in Philips did exactly this to me. The stuff he had to show was worth the trip, the method of attracting attention was sneaky.

ON THE PHILIPS STAND

The first item on the Philips menu, once the keen, tall staff rep had got me where he wanted me, was the 6CM 3209 super VGA monitor. Here, I was treated to the margarine test - could I tell the 6CM 3209 from its main competitor?

Both monitors were surrounded by a frosted perspex frame and both displayed the same sequence of screens. The Philips monitor, said an under-dressed demonstrator, has a dot pitch of .28mm, while the other monitor has a .35mm dot pitch. Surely I could see the difference? My glum look must have told her otherwise.

'The 6CM 3209 automatically re-adjusts the screen to fill the display, independent of the screen mode being used'. Well, one of the displays was certainly off-centre. The Philips monitor had true whites, while the competitor is the real Daz of the monitor world, with a blue pigment. I always was a Daz man, and I thought we were testing margarines, at any rate.

I picked the wrong monitor, didn't get the little tin badge and spotted the Philips crew looking askance at each other over my shoulder. The 6CM 3209, £529.99, is good, but not that good.

Next stop was a look at the new PCD range of desktop machines. These are smart, small-footprint PCs sporting

VGA screens (except for the 8086 entry-level CGA machine). They come with a copy of Microsoft Works, MS-DOS 4.01 and a mouse.

A year's on-site maintenance is thrown in as is the latest thing - a day's training in the use of the bundled software. Prices start at £599 and rise to £2,499 for a 386SX machine with a 100Mb hard drive.

By this time I was late for another appointment and could only take a fleeting glance at perhaps the most interesting of the new offerings from the Dutch giant. The PCL laptops look very much the size and weight of true A4 portables.

The £1,199 PCL 101 has a CGA display, a 1.44Mb floppy drive and is less than an inch thick. The PCL 200 has an 80C286 processor and a 20Mb (£2,399) or 40Mb (£2,799) hard drive. It also has a VGA backlit screen.

None of the PCL machines run for longer than three hours in normal use, though, so they still have a way to go against the Poqet or Psion machines at that respect.

ARTLINE ON-LINE

That 'other appointment' was the launch of DESKpress, GST's professional upgrade to Timeworks Publisher PC. This was held at the National Motorcycle Museum, just down the road from the NEC. The get-together was more a chance to speak to GST's personnel than to see the product itself. No demo was forthcoming, but the product is due for release at the end of May.

Among the journoes and dealers there was one Thomas Hensler, who is the general manager of CCP software, the German software house which has

written Artline 2 for Digital Research (see Express 78). He confirmed that the program has been completely re-written from the ground up, that it works a lot faster than the original and that it should start to appear in June. I look forward to seeing a copy.

I asked Thomas why he was at the GST launch, and he said that in many ways CCP was of a similar size and in a similar position to GST. Both Artline 2 and DESKpress work under GEM and there were some useful exchanges of ideas between the two companies. It's good to see that not all software developers guard every byte of code with a jealousy bordering on psychosis.

I will include more goodies from the show in next week's column.

01 = 071 OR 081

A reminder that last week was the deadline for changing all the 01 London exchange codes to 071 for inner London and 081 for outer London.

This changeover has to be done as there are just too few numbers available to cope with the massive increase in use of lines. The increase is at least in part due to the extra requirement for fax lines in London.

You can obtain a little booklet of new exchange codes by ringing British Telecom, use the Portex program mentioned last week to update your Portex-style files, or buy a copy of the May issue of PC Plus, which has a very handy pop-up code change routine on the SuperDisk.

Whichever method you choose, the time to make the changes has already arrived - so get on with it.

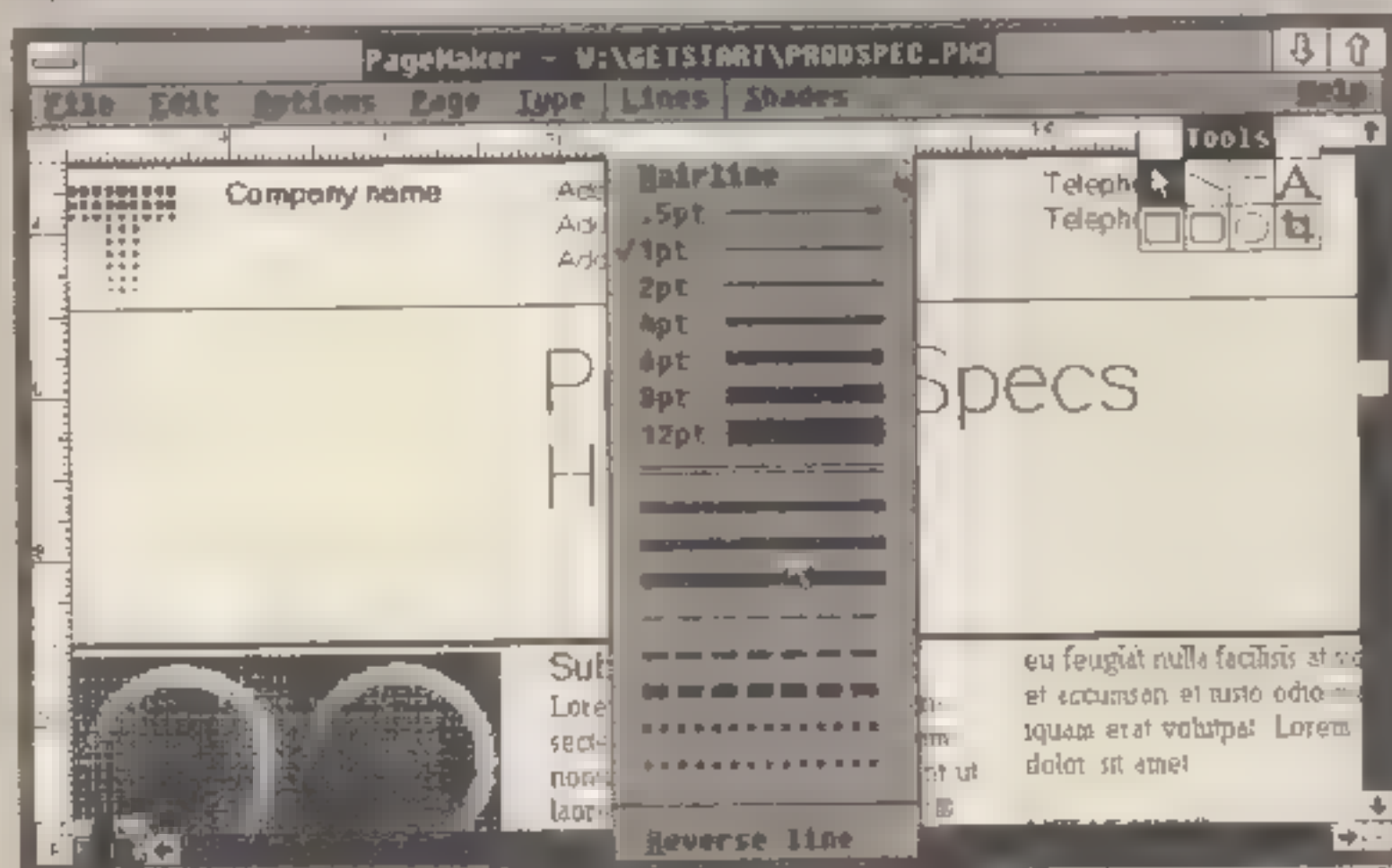
Simon Williams

HAPPY BIRTHDAY, DEAR PMUG

PageMaker, one of the best known desktop publishing programs for PC and Mac, has a user group. Intelligently enough, it's called the PageMaker User Group, and it's just celebrated its first birthday. According to the group's newsletter, the first AGM was preceded by a demonstration of the yet-to-be-released PageMaker 4 on the Mac.

The new version features available to Mac users should also be seen when the PC version becomes available, though a veiled comment in the newsletter suggests that Microsoft, and presumably Windows, is the stumbling block here. The new Mac version will handle long documents, indexing and table of contents, story editing, text rotation and tracking.

If you use PageMaker or are interested in the group for any reason, contact the membership secretary, Andrew Taylor, on 081-883 8465. The next meeting will be at 2pm on May 17th at the Arncliffe Gallery in Bristol. There is a £5 entry, if you're not a member.



• PC PageMaker: update due soon.

PC GAME OF THE WEEK

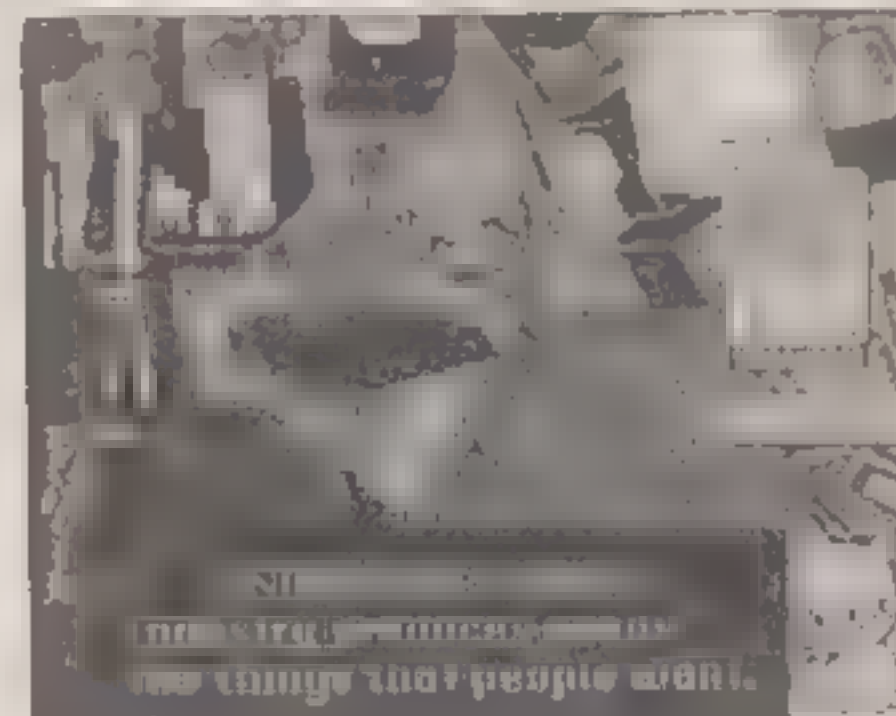
BALANCE OF THE PLANET

Accolade •
£34.95

It says a lot for the human condition that we generally find beating the daylight out of a bunch of aliens far more satisfying than saving the whale or, in this case, solving the planet's environmental crisis.

However Balance of the Planet looks promising, largely because it is written by Chris Crawford who was also responsible for Balance of Power, a singularly chilling game of international politics. This time you have been appointed High Commissioner of the Environment by the United Nations, charged with making this a green and pleasant planet.

To accomplish your goal you can levy taxes on activities that affect the environment, such as



logging, CFC production, beef production, use of coal or nuclear energy, and you can also spend revenue on subsidies research into solar energy, family planning, and so forth. Every five years from 1990 to 2035 you get the chance to vary the level of each, and then wait for the consequences to unfold.

In many ways the gameplay, involved though it is, serves merely as the icing on top. Underneath is a complicated and well implemented hypertext system that lets you explore in full the implications of every factor. Although the display is actually quite low resolution, each of the 150 screens is informative and

backed up by explanatory text in the 136-page manual.

Crawford is open about the program's limitations - and his own bias. However Balance of the Planet is unique in that you can actually examine and change parameters of the governing formulae to suit your own beliefs, or load one of four ready-made 'bias files' ranging from 'pro-nuclear' to 'third world'. It is not a game that will keep you up into the wee hours, but it is by far the most successful attempt at providing educational value to a game. Balance of the Planet is endorsed by Friends of the Earth, too.

Matt Nicholson

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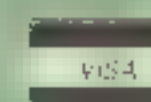
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CARTRIDGE WAR HOTS UP

The Amiga utility cartridges are coming thick and fast. After the recent arrival of the Nordic Power cartridge, Dattel's Amiga Action Replay has come on to the scene to challenge Nordic's monopoly.

Just like the Nordic unit, the Dattel cartridge plugs into the Amiga 500 expansion edge connector and provides all manner of wonderful features to make life with your Amiga that much easier. Using the cartridge in simplicity itself.

Once plugged in and turned on, just load the program to be frozen and press the 'Freeze' button on the cartridge and you're in action. Unlike the Nordic unit, Action Replay isn't menu driven. Instead, each feature has its own command which is typed into a CL-like editor.

Although this system is initially rather unfriendly, a few hours playing around in all you need to get to grips with it - it still would have been nice if the entire affair was menu driven.

Features-wise, the Action Replay certainly is well endowed. Features include full backup facilities (but don't get too excited, the vast majority of games won't work with it), an infinite life/trainer mode for perfecting your gameplaying skills and a virus detection utility.

In common with the Nordic cartridge, Action Replay will happily grab and save to disk graphics and sound from just about any Amiga program. Indeed, after exhaustive testing, the Action Replay proved itself more successful at grabbing screens than the Nordic cartridge.

What is more, the Amiga Action Replay includes not one monitor, but two monitors. The first handles machine code, while the second is a unique cop-

per list monitor that allows you to directly modify copper lists until your heart is content.

A1500 FOR £50?

Checkmate's A1500 (see Express 78) has been with us for a couple of weeks now, and is doing quite nicely thank you.

Although the system is ideal for the Amiga user wishing to take advantage of the plethora of 2000 cards and peripherals, for those users wishing to just make their machines look nice, the basic £230 price tag is perhaps a little too much on the steep side to justify.

Bowing to public pressure, however, Checkmate has come to the rescue of such users with the announcement of the A500 external keyboard.

The kit - which will be sold for

approximately £50 - will allow you to bring your A500 keyboard out of the main system box and mount it in an A1500 keyboard case. The rest of the Amiga stays put within the main A500 box.

The kit is comprised of an A1500 keyboard case, a blanking plate that covers the gap left by the A500 keyboard and all the necessary connectors and wiring. Obviously because this 'mini-A1500' is only a keyboard modification, you won't be able to take advantage of the A1500's expansion capabilities without the additional purchase of the A1500 system unit.

So, if this sounds like your cup of tea then contact the boys who call themselves by the name of Checkmate on 071-923 0658.

Jason Holborn

LIFE IN THE FAST LANE

I'm in heaven. Gone are the days of 68000 processors - we're talking 32-bit power computing here, matey!

Yes folks, thanks to the lads at Solid State Leisure, I've been taking the 20-Card for a test drive around the Express test track. After many years of cruising with the 68000, the Solid State Card turns your Amiga into the Cosworth of computers.

The 20-Card is a processor accelerator card that fits internally into an Amiga 500. The board is based around the big brother to the 68000 - a 16MHz Motorola 68020. Fitting the board is easy as pie and could be carried out by any reasonably-competent person.

All you have to do is to open your machine, locate and remove the 68000 processor (don't worry, you'll have no problems finding it) and plug the 68020 board into the 68000's now empty chip socket. That's all there is to it!

Depending on your budget, the board is available in a number of configurations ranging from just a 68020 with 1Mb of 32-bit RAM to a 68020 with a 16MHz 68881 (or 68882) maths co-processor complete with 4Mb of 32-bit RAM.

Even if you just buy the base-level card, you can easily add a maths co-processor and extra RAM at a later date.

Unlike the 68000, the 68020 is a true 32-bit processor. This basically means that the standard Amiga RAM is only 16-bit, and your new processor will thus not run at its full speed.

So, to combat this slowdown, the 20-Card has the added advantage of offering ROM shadowing. This allows the Amiga Kickstart ROM to be copied into the 32-bit RAM.

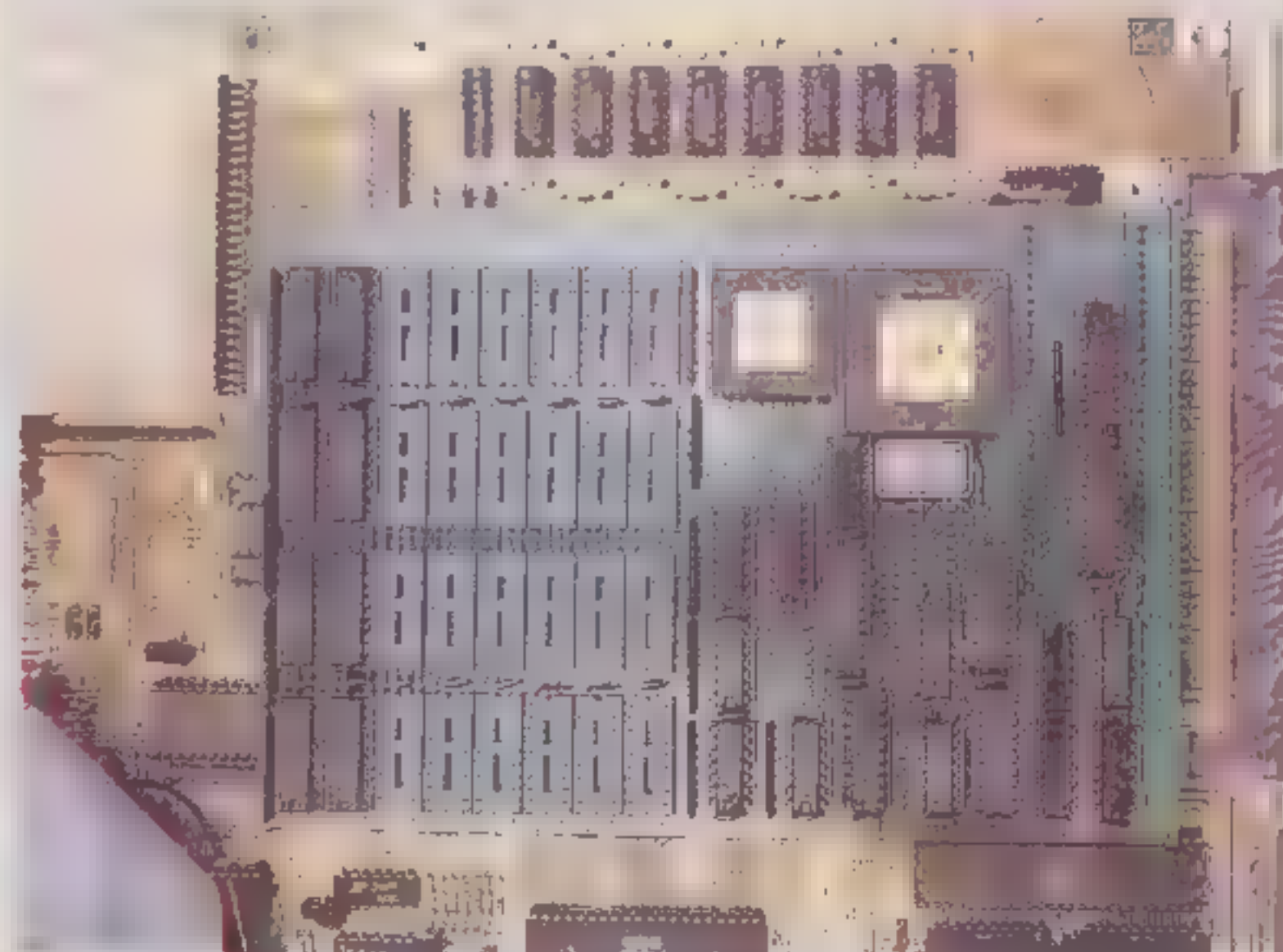
Once copied, the board then re-vectors any ROM accesses to this area of memory, thereby speeding up the entire system. By the way, because this re-vectoring is completely transparent to the system, all programs that use the Amiga operating system routines will be speeded up.

But just how fast does this thing fly? Well, according to the public domain system diagnostics program, SysInfo2, the 20-Card runs at five-and-one-half times faster than a standard Amiga and 18 times faster than an IBM XT, which I'm sure you'll agree is pretty impressive stuff indeed.

The 20-Card really comes into its own, however, when used with packages that take advantage of the 68881 - just try using it in conjunction with Sculpt 4D or Turbo Silver and you'll see what I mean.

Mark Tenney, a spokesman for Solid State, told me that a lot of customers seem to think the card is unpopulated, but this is not the case. The unit includes the 68020 in addition to 1Mb of memory.

In summary, the Solid State 20-Card is phenomenal. Furthermore the said kit has, just minutes before going to press, been reduced by another phenomenal £50 to £349. Give the boys a bell on 0933 650677 for more details.



• The Solid State Leisure Card cruises away with accolades.



Infogrames • £19.99

Classical music is the style of the future. Well this is what the dusty old conductors and vicious orchestral instruments want. They want it so much in fact, that they have destroyed most of the world's rock and roll records. What the world needs is to get everyone to stand up for rock. But how to achieve this?

Hidden within a treacherous area of platforms, is the original recording of Elvis Presley's first song. All we need is someone to go and get it...

Enter Jumping Jack Son - descendant of the chap immortalised in the classic Rolling Stones hit. Jack must go through a series of zones, picking up records by turning areas of tiles the right colour. Once a record has been collected, Jack must put it onto its turntable - so that the

sounds of rock may be heard again. Unfortunately, the classical instruments are roaming the levels trying to stop Jack from completing his quest. They can be deterred for a while either by dropping cassettes in their way (they hate these newfangled devices) or by wearing 'hard man' shades and frightening them away.

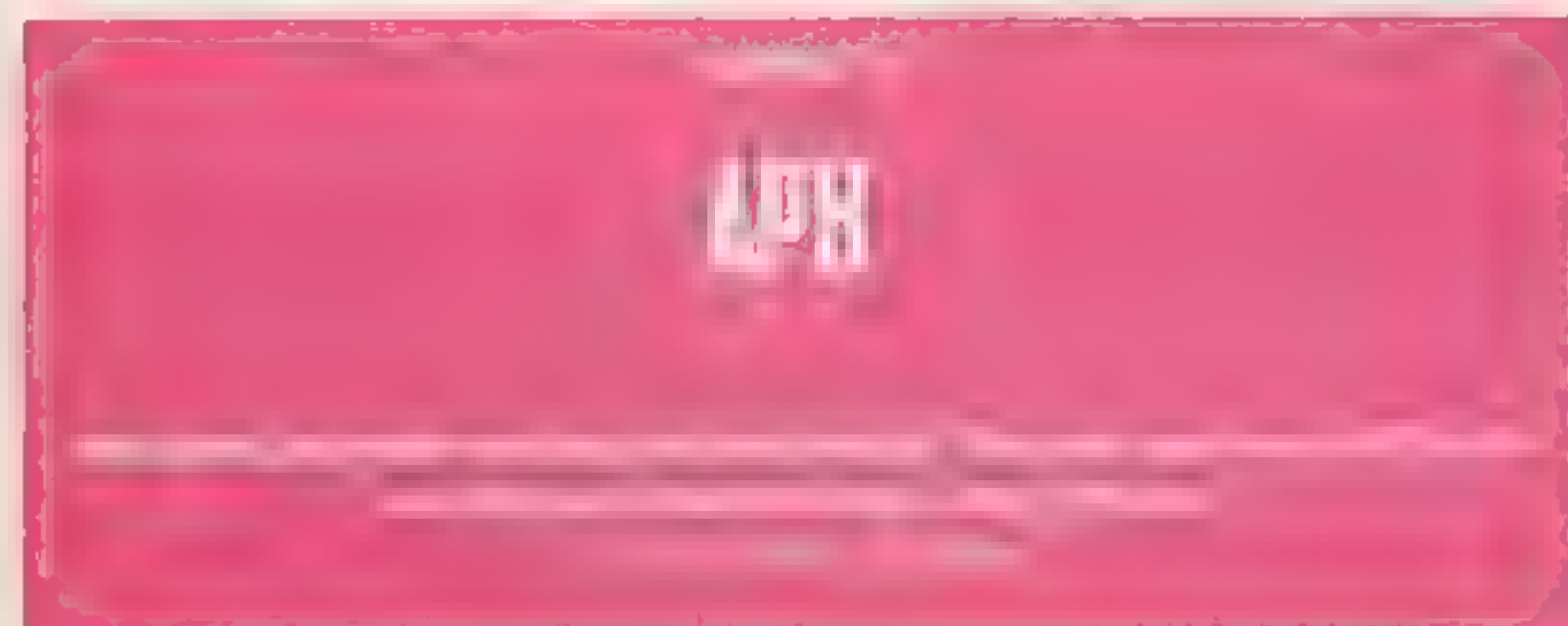
Even though the plot of Jumping Jack Son borders on the realms of the ridiculous, the game itself is jolly good fun. The boppy rock music gives the game a bouncy feel, as do the colourful, cartoon-style graphics.

The graphical style is similar to Bombuzal, but

while Mirrorsoft went for a total puzzle game, Infogrames' program relies much more on the fast arcade action side of things, which gives it a feel of its own. The game is fun from the outset and there are plenty of levels to keep players occupied for some time, and the clever use of 'earned' passwords means that levels can be skipped - but only if you solve the challenges!

High-class puzzle games are becoming a rarity these days, so it's nice to see someone taking an effort to produce a game of this quality. Have a try for yourself if you fancy a laugh.

Maff Evans



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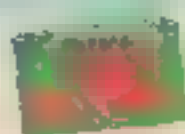
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SAMSUNG (monitor not included)

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PROTEXT UPGRADE NENT

The word from Anor ■ that work is progressing steadily on a major upgrade to Protext, the word processor that's used by the stars (and by me, come to think of it). Version 5 is to include improved laser printer support and expanded editing of ■ large number of files – possibly as many as 36.

Laser printer users will be pleased to hear that the old problem of Protext's inability to cope with more than one laser font is soon to be a thing of the past: unlimited fonts will be possible. And you'll be able to see where line breaks fall when proportional fonts are used, too. Furthermore, you'll be able to view two documents on the screen ■ the same time.

And the new version of Protext has been re-compiled using the latest version of HiSoft's Lattice C, with a great decrease in file size and a massive increase in speed.

Pricing and upgrading arrangements have not yet been finalised, but I'm sure the ever-friendly guys at Anor will be delighted to answer any questions you may have. Call them on 0733 68909. Or keep an eye on this column for further details!

STE UPGRADE CHALLENGE

Long-established (it says here) memory chip supplier Perrymere Ltd has thrown down the gauntlet. It has challenged anyone to find cheaper STE upgrade chips. "With our years of experience in the industry," claims boss David McGee, "we are able ■ offer the SIMMs and SIPs

required for STE upgrades significantly cheaper than other companies."

He claims that all orders for STE upgrades are despatched same day. Prices are as follows: 0.5Mb – £50, 2Mb – £160, 4Mb – £310. Think you can do better than that? The self-styled "corpulent" David McGee offers to better any genuine price on STE RAM upgrades. Take him up on it on 051-227 2482.

500 AND RISING!

PDQ differs from other PD libraries in that it has grown out ■ the difficulties and frustrations experienced by its founders in trying to choose a game from existing services.

No one library, claims Sharon Slade of PDQ, stocked more than 50 per cent of the estimated 500 plus available. And the problem was considerably worsened when you consider price variations and the fact that the same game frequently masquerades under different titles.

Hence comes the name PDQ. The first catalogue, out now, contains well over 300 games, with the prospect of hitting a staggering 500 ST PD games by July!

These include the excellent Budgie games, for which PDQ ■ an authorised distributor. Prices are £2 for a single-sided disk and £2.25 for double. Blag a catalogue from PDQ, PO Box 38, Eastleigh, Hampshire SO5 5WR.

PD GALORE

HAL computing ■ getting in on the act, too. Like Floppyshop Sean Hodgson's PD library produces a nicely presented on-disk catalogue.

Sean's has a very clever program that enables the user to read descriptions of the software and also to view screenshots of selected items. The disk I've been sent has over ■ screen shots on it – very pretty they are too.

Another bonus is that the disk contains over 200K of free PD programs – all on one disk that Sean insists ■ compatible with ■ STs regardless of model, monitor or disk drive. Good stuff: and the contents are free! Simply send Sean ■ blank disk and an SAE and away you go. Alternatively you can send £1 and HAL supplies disk and postage.

And if you're thinking of producing a similar catalogue on disk, HAL is very kindly offering to let you use its terrific

shell program free of charge – provided you bung an advert for HAL in!

Truly an irresistible offer. So get to it: HAL Computing, 15 Regent Terrace, Leeds, LS6 1NP. Tell 'em Steve Carey from Express sent you.

A MAN AND A MOUNTAIN

It is extraordinary how ST PD libraries have boomed ■ the past year or so: rarely a week goes by when I don't receive notice of one or more new additions. And, as that chap in the jumpers always says, why not?

This week I offer news of developments on three fronts, beginning with one of the most established services of them ■. For the latest issue of Floppyshop News ■ out, and as usual it's a pleasure to read, with lots of quality fare, reviews of PD (and I thought the Floppyshop people said PD reviews were 'silly'), an adventure column, a STOS BASIC tutorial, ■ rather good long review of Replay Professional and (as they say) much more.

By the way Steve tells me that he, like most PD librarians, is currently embarked on a massive test-out on his disks to check for STE incompatibility problems. So far he reckons that guesses of 50-60 per cent failure rate are likely to be gross exaggerations, though naturally he can't be sure until he's gone through ■ 1,400 disks. (And you thought you had it rough!)

Get hold of a catalogue – and full details of any STE incompatibility problems – by writing to Floppyshop, 45 Provost Graham Avenue, Hazlehead,

Aberdeen AB1 8HB, or by making that call to the good people on the following series of digits: 0224 691824.

THE BLITTER END?

"Erm," enquires John Kelly of Manchester, a new ST owner, "erm... I don't want to sound stupid, but what is a blitter, please? And ■ it a good thing or a bad thing?"

A blitter, John, ■ simply a chip fitted to Mega STs and the new STE that speeds up graphics handling commands so that GEM windows (what happens when you double click on ■ disk icon) open faster and areas of the screen can be picked up and re-positioned more quickly and more efficiently. The thing is, John, Atari intended that games software should take advantage of the blitter to speed things up dramatically.

That hasn't happened, since – as you know – 520STs don't have a blitter. So it isn't used. It ■ possible to buy and fit a blitter yourself, but I can't really see why anyone should bother.

If you want the benefits without the hassles you could always order HiSoft's software version, called TurboST. It costs £34.95 from the folks down at the HiSoft building, who can be reached on: 0525 718181. (There was a demo version on the cover disk of April's ST Format, back copies of which are still available – buy a current one to order.)

Hope that explains the blitter for you, John. Soon: why some people think that the greatly munificent Bobby Davro ■ a comedian.

Steve Carey

ST GAME OF THE WEEK: GHOSTS 'N' GOBLINS



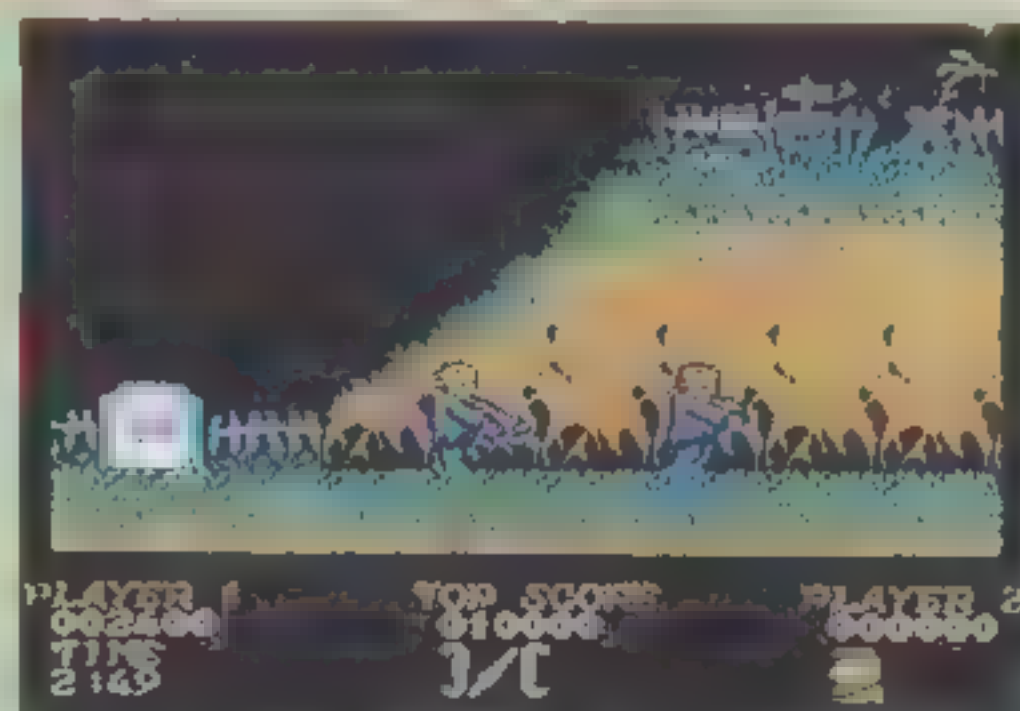
ELITE • £19.95

It was four years ago that Ghosts 'n' Goblins appeared in the arcades. Elite picked up the Capcom licence immediately and made conversions of the game across a variety of formats. Sadly, it has taken until now for them to get around to doing an ST conversion of the coin-op classic.

Your purpose in the game is to rescue the beautiful maiden, and to achieve this tricky feat you have to march through one level after another of awesome creatures, all determined to halt your progress.

As is typical for this style of game, you meet a large end-of-level guardian before you can proceed onto the next level. Levels comprise primarily of horizontally-scrolling sections although there are platform levels as well.

Horizontal-scrolling on the ST can be particularly difficult, but the programmers have made



sure that it is smooth and fast. At quiet points in the action, the game freezes in order to load the next level from disk.

Along the way you need to pick up bonus weaponry which lies in the grass. There are an enormous range of weapons from fireballs to hammers and arrows. As you pick up one weapon, you drop your existing weapon.

Weapons fall into two categories – one type is thrown in such a way that it falls to the ground, while the other type fires straight off the end of the screen. Some are of more use than others so you need to do your best to make sure you don't replace a good weapon for a bad one. The obstacles aren't limited to troublesome sprites – you also need to

leap onto moving platforms and avoid falling into water if you want to last out the day.

The graphics in this version of Ghosts 'n' Goblins resemble those from the arcades but the animation is particularly poor. None of the characters move with any realism and your character jerks through the levels rather than runs.

It's inevitable that a classic like Ghosts 'n' Goblins is going to be compared to US Gold's conversion of the sequel. While there's no disputing that this version is enormously addictive, it doesn't have the quality of visuals or sound effects found in Ghouls 'n' Ghosts. This is a shame because it leaves you thinking it is just too little, too late.

Mark Higham

ATARI IN RUMOUR PROBE

I don't for a moment suppose that there can be any truth in the rumour I've heard – from a surprisingly good source, too – that Atari's new STE bundle plans came a cropper. It seems the size of the manual meant that the contents of the bundle could not fit into the box provided. Surely this can't be true... Can it?



• But does the manual fit in the box?

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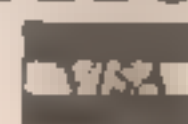
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WORD PROCESSORS

● PROTEXT

Arnor 0733 68909
£99.95

It's fast and easy to use - has a good spellchecker and even has a calculator built in for doing tedious sums. Text can be viewed in WYSIWYG mode too. Keyboard can be configured to execute a stream of commands at the press of a key.

- ▲ Word count, many block commands and calculator
- ▲ Powerful spellchecker
- ▲ Can work on two documents simultaneously

▼ Not beginner-friendly

● KIND WORDS

Amiga Centre Scotland 031-557 4242
£49.00

Produces the best printer output of any word processor on the Amiga thanks to special output modes which simulate near letter quality. Has lots of good printer drivers to exploit even the most simple of printers.

- ▲ Excellent printer output
- ▲ Graphics can be imported

▼ Lacks a word count unless you spell check

● SCRIBBLE

HB Marketing 0895 444433
£99.95

A simple to use word processor with spell checker and mail merger. Reformats

text as you type. Although it lacks graphical functions, its simplicity makes it an excellent word processor.

- ▲ Simple to use
- ▲ Mail merge and spell checker

▼ Can't import graphics

● WORDPERFECT

Sentinel
£293.25

A hefty 500 page manual teaches you how to use WordPerfect. A huge spellchecker dictionary and a thesaurus add to the bundle. Can call up a command line interpreter from within the program.

- ▲ WordPerfect is used on many machines so it's useful if you're familiar with it

▼ Expensive otherwise and lacks graphical commands

SPREADSHEETS

● SUPERPLAN

Precision 081-330 7166
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Comes complete with a tutorial disk to help get you started - all the functions you're likely to need in a spreadsheet and also has excellent graphics display which makes data more digestible

- ▲ Macro language allows keyboard configuration
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▼ Requires 1Mb of memory
▼ Awkward to use because of poor use of menus

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● SUPERBASE 2

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Simple to use, even for a beginner. Data can be imported from other files easily. Excellent data validation and useful help messages can be included. Mail merge facilities.

- ▲ Excellent tutorial files
- ▲ Graphics can be included and saved with the database

▼ Not cheap

● SUPERBASE PROFESSIONAL

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▼ Even less cheap

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Produces PostScript compatible files for use by laser printers and typesetting bureaux - can also produce colour separations. English, French and Spanish dictionaries in the spellchecker. Five magnifications including life size and 200 per cent. Probably the best and most sophisticated DTP package on the Amiga.

- ▲ PostScript compatible files
- ▲ Colour separations can be created
- ▲ Three dictionaries

▼ Requires 1Mb of RAM
▼ Two drives strongly recommended

● SHAKESPEARE

Cloudhall 0604 231 2111
£99

Clear and informative manual. Produces colour pages directly on colour printers. Has some problems with large documents so best used on single pages. Graphics can be imported and each retains its palette. PostScript compatible.

- ▲ Ideal if you have a colour printer
- ▲ IFF file import

▼ No magnify function
▼ PostScript output is only in grey scale
▼ Graphics can't be edited on the page

● PUBLISHERS CHOICE

HB Marketing 0895 444433
£99.95

A combination of three programs: Pagesetter, Laserscript and Kindwords. The latter is a word processor with both a spellchecker and thesaurus - just in case you get lost for words. Laserscript is a utility for converting Pagesetter files to PostScript format and printing them. Pagesetter includes a mini graphics package to help the page creation process. Excellent manual.

- ▲ Includes powerful word processor - Kindwords
- ▲ PostScript compatible
- ▲ Graphics capabilities in Pagesetter
- ▼ Font and hyphenation information not imported with text



DATAPLEX

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A very powerful DTP package, but suffers a little from unfriendliness. Style codes are imported when the text is. Includes a simple graphics editor which can be used to create or edit IFF files for use on the page.

▲ PostScript output is supported
▲ Text can be edited on the page

▼ Lacks a WIMP environment

● PAGESTREAM

Silica Systems 081-309 1111

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Text can be flowed around graphics in most DTPs, but Pagestream has the edge in that respect - text can be flowed in many ways. Magnification is not limited to five sizes - you can work virtually any magnification.

▲ Flexible text flowing
▲ Large and easy to edit spell check dictionary

▼ Difficult to produce colour separations

GRAPHICS**● PHOTON PAINT 2**

Microillusions 0703 703030

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Art package capable of producing HAM images. Comprehensive set of tools allowing re-scaling, flipping, rotation, bending stretching and much more.

▲ Wide range of tools for image manipulation

▼ But some are very slow to use

● DIGIPAIN 3

Newtek/Precision 081 330 7166

£69.95

HAM art package with facility to create images up to 1024 by 1024 pixels - the only limitation being memory. Good text entry system which uses a buffer. Text is manipulated before it's put on screen as a brush. Friendly interface between package and user

▲ Good text manipulation
▲ Huge images possible

▼ No fill or airbrush
▼ Awkward magnify mode

● DELUXE PAINT III

Electronic Arts 0753 49442

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Excellent art package that allows use of full overscan and extra halfbrite screens. Simple animations can be created too - very easy to do. Stencil mode stops you from accidentally airbrushing over the wrong part of the screen.

▲ Perspective fill
▲ Halfbrite Mode
▲ Full overscan screen

▼ 1 Mb required
▼ HAM not supported

● FANTAVISION

Domark 081 780 2222

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Uses polygons to create animated

objects and relies on tweening to create the illusion of movement. Full colour IFF files can be imported to make up the background scenery.

▲ Fast animated sequences that don't eat up much memory

▲ One object can be easily transformed into another

▼ Objects are silhouettes

● MOVIE SETTER

HB Marketing 0895 444433

£69.95

Uses a series of sprites to create animations which are more cartoon like in nature than Fantavision. Sprites can be brushes created with most art packages - they're in IFF format. Storyboarding makes it easy to use and see what's going on. Animation can be played, re-wound and stepped through frame by frame.

▲ Minor changes in productions can be viewed instantly

▲ Sound is easily integrated

▼ Works best with 1Mb

▼ Eats up memory if not careful

● PIXMATE IMAGE PROCESSOR

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Allows pictures to be transformed from one form another - HAM can be reduced to 32 colour pictures for example. Images can be cleaned up, defocused, squashed or stretched.

▲ Converts images from one format to another

▲ Wide range of cleaning options

▼ But who the hell distributes it?

● X-CAD

Commodore 0628 770088

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Very fast re-drawing of images. Has great potential in the range and qualities of images that it can produce. Hardware requirements mean that you must be very serious about your CAD to justify buying it.

▲ Best CAD package available

▲ Fast

▲ Comprehensive

▼ Needs 2Mb

▼ Better with hard drive

● INTRO CAD

HB Marketing 0895 444433

£59.95

Extensive colouring routines enable realistic and detailed objects to be created. Easy to include text too. Ideal as an introduction to CAD

▲ Simple to use and much cheaper than X-CAD

▲ Excellent results can be obtained with a bit of skill

▼ Not as comprehensive as other packages

● SCULPT 4D

Amiga Centre Scotland 031 557 4242

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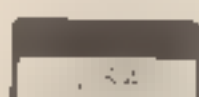
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- ▲ Produces excellent raytraced pictures
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▼ Expensive unless you're a real raytracing fanatic

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▼ 1Mb recommended

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- ▲ 24 tracks
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▼ Lacks powerful features

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▲ Just plug in and away you go

▲ Provision for including samples in your programs

▼ Manual a little tricky for the beginner

● AMAS

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Sound can be digitised from a microphone or an amplified source which is unusual in samplers. The results can be played across a midi keyboard too.

- ▲ Samples can be compressed
- ▲ MIDI ports included

▼ No facility for using samples in your own programs

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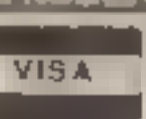
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A world filled with monsters and treasures await anyone brave enough to enter the labyrinthine catacombs of Dungeon Master. 14 Levels of dungeon await and only the brave and strong will come out alive.

INTERCEPTOR

Electronic Arts 0753 49442
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Flight simulators are often dull and boring, but Interceptor is far from that. You're at the controls of an F-18 and have to accomplish many missions against hostile forces. The graphics are superb and the missions will challenge even an ace pilot.

VIRUS

Microprose 0665 504326
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Virus was originally written on the Archimedes and was thought impossible on any other machine. The Amiga proved them wrong. You too can experience the wonderful graphics and varied missions as you fly around worlds, zapping and fighting for survival.

DRAGONS' LAIR

Entertainment International 0268 541126
£44.95

It might seem expensive, but that's because it comes on six disks. Dragon's Lair was one of the first arcade games to use laser disk technology and it's even more impressive when you realise that your Amiga does it with no extras - just its memory and good programming.

POPULOUS

Electronic Arts 0753 49442
£24.95

The fate of 999 worlds lies in the balance with you controlling the forces of good. Play god and create a world for your people to live in - not forgetting to destroy the minions of evil of course, before evil destroys your people.

LANGUAGES

ARGASM

Argonaut Software
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The fastest assembler available. It's compatible with most other assemblers so you can just transfer a file to Argasm and carry on working.

- ▲ Very fast assembler
- ▲ Compatible with Devpac

▼ Can't assemble to memory

GFA BASIC 3

GFA Data Media 0734 794941
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Amiga BASIC has its good points, but if you want a more friendly and powerful language to program in there's GFA

BASIC. It can be used as a standard BASIC, but to get the full benefit from it you need to use the more potent structured commands. It's compatible with Amiga BASIC too - so you won't have to start all over again if you convert a program.

- ▲ Fast Interpreted BASIC
- ▲ Structured language

▼ Requires compiler to produce stand alone code

HISOFT BASIC

Hisoft 0525 718181
£79.95

A very fast compiled BASIC with a powerful text editor to make life easier. Instruction manual helps you through the tutorial programs. Can compile Amiga BASIC programs with no modification.

- ▲ Produces very fast code
- ▲ Compiled language

▼ No interpreter - you must compile in between each modification to the program - which wastes time

LATTICE C V5

Metacomco 0272 428781
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C is the next best thing to assembly language when it comes to speed, and Lattice C is a very good implementation of C. Includes a powerful debugger for when things don't go right. Also has a powerful text editor for creating the code and two very hefty manuals.

- ▲ Good text editor
- ▲ The best and fastest version of C

▼ Price to match

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- ▲ Crosshair and pen included
- ▲ Good alternative to mouse

▼ Damn expensive

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- ▲ Fast storage system
- ▲ Cheap

▼ Needs Kickstart 1.3

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be grabbed in real time. Basic unit grabs 320 by 200 images in 16 colours, but for a bit more cash you can snap 320 by 256 images in 4096 colours.

- ▲ Very fast mono image grabber
- ▲ Can play back a sequence of frames from memory

▼ Software incomplete

● VIDEO STUDIO

Maze technology 081 520 9753

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A complete post-production utilities package. Can be used as a video titler. IFF file import. Plenty of wipe/dissolve patterns to make things more impressive.

▲ Comprehensive

- ▼ Requires two disk drives and 1Mb RAM
- ▼ For best results will need a genlock

● DAY BY DAY

Digit International 0395 270273

If you have trouble remembering appointments then this could be the thing for you. It enables you to store and recall information on appointments at the touch of a key. Ideal if you use your computer every day.

▲ Month and week planner to remind you of things to do

▲ Awkward to edit - you have to virtually re-type the entry

● MINIGEN

Applied Systems Developments Ltd 0724 280222

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A genlock device which allows you to produce Chart Show-style overlays on your videos. Uses standard IFF files to overlay. Easy to use.

▲ Lots of software available to exploit Minigen

▲ Cheap

▼ Poor manual and introduction disk

● A-MAX

Entertainment International 0268 541126

£134

Why bother with a Macintosh emulator when you've got an Amiga? Because Mac DTP software knocks spots off anything on the Amiga. Admittedly you need at least 1Mb of RAM to do anything useful with A-Max, but a 1Mb Amiga is considerably cheaper than a Mac.

▲ Works with most Mac software

▼ Doesn't support hard disk... yet

▼ Need to purchase Mac ROMs too

● PERSONAL TAX PLANNER

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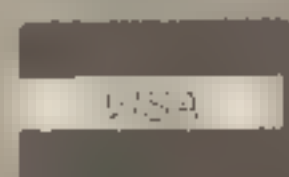
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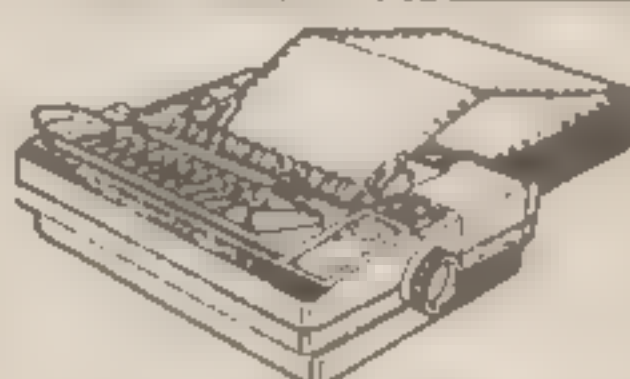
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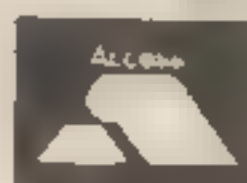
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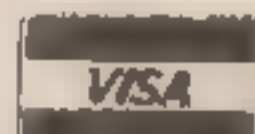
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WANTED Philips CM8833 monitor with Amiga lead if poss. Cash waiting. Phone John 061-790 0655 after 6pm

AMIGA A500 typing tutor required, either PD or other. Willing to pay reasonable price or will swap for PC typing tutor! Phone (07496) 79748.

WANTED Sinclair PC200 colour system. Swap Amstrad PC 1512 C/M DD. Consider Atari STE for the PC1512. Flat 119, Mount Lane, Bracknell Berks.

IBM convertible 5140 wanted: LCD or colour, mono monitor plus battery pack, adaptors, diskettes, charger. John Bragg, 13 Neville St, Durham City, Co Durham, DH1 4EY. Urgent!

AMIGA GFA basic source code required. Send details to: Gordon Keenan, 61 Glenfinnan Road, Glasgow, G20 8JG 'Tempest' Do you have any spare bits? (TSG90)

SWAP PCW 8256 printer for any Citizen or Star Colt 1200 for disk drive. Phone (0208) 77409.

ORIGINAL Atari ST software wanted. Must be boxed, with instructions and 'virus free'.

Anything considered including large amounts when selling your ST: (05438) 4102 evenings.

WANTED disciple or plus interface complete with handbook and DOS. State version. Must be working well. Mr M. Perry, 216 Marlpool Lane, Kidderminster, Worcs, DY11 5DL.

A500 wanted with/without peripherals. Call Andrew (0835) 23598 evenings.

WANTED 40/80 switchable disk drive for BBC. Must be in good condition. Phone Bournemouth 570755.

WANTED The Pawn Atari ST. Good condition: Phone (0983) 853442 and ask for Ellis after 5.30pm week days. Also any tips for the ST.

MONITOR black/white or colour. Must have High Resolution for Atari ST 1040. Are you into Barbershop arrangement and have Atari. Phone (0883) 345883.

PRO video plus or other video titling progs for Amiga. Buy or exchange for other progs as required. J.G. Yeomans, 13 Wellington Close, Matlock, Derbyshire, DE4 3GE.

EPSON HX-20 laptop built in printer and cassette. No manuals or P.S.U. Swap for scanner or disk drive for A500. Phone 041-

551 0320 after 7pm.

WANTED memory upgrade kit to upgrade Atari 520STFM to 1Mb RAM. Tel: Jason on (0602) 390329.

AMIGA A500 hard disk drive wanted preferably A590. Good price paid. Leave message on (0733) 78705 or write: N.Wilson, 102 Carron Drive, Werrington, Peterborough, PE4 6NY.

WANTED EPYX championship wrestling Commodore 64 tape. Buy or swap game. Please contact Alan Young, 276 Knightswood Road, Glasgow, G13 2ET. Somebody must have one.

WANTED cheap mega drive. Must be PAL. Must be in good condition with pad. Will pay up to £100. Tel: Naeem (0923) 836118.

WANTED 'The Director' for Amiga. Also director tool kit as cheap as possible. Phil White, 12A Station Road, Aldridge, Walsall, West Midlands, WS9 0BN.

HELP!! I need an original of 'Calamus' DTP by Signa. Must have manual. Urgently needed. Will pay any reasonable price. Call Neil (0273) 503547 evenings.

SWAP Atari portfolio pocket PC, under guarantee, boxed, hardly used for ST or Amiga. Others considered. Phone 0342 328497. Leave number or call after 6pm.

COMMODORE plus/4 owner wants useful disk based software. Steve Rogers, 11 Bakers Park, Holne, Newton Abbot, Devon, TQ13 7SN.

CAN anybody help? I need the CP/M 3.0 disks for my Commodore 128. Please write: Frank, 15 Brook Street, Brown Lees, Biddulph, Stoke-On-Trent, ST8 6PG.

WANTED Q.L. disk interface. Cash waiting. Ring Steve on (0282) 51854. Also want QL contacts East Lancs area preferably.

AMIGA software wanted. Smartdisk, sound-

tracker powerpacker 3.2 and any other PD, shareware or cheap 2nd hand stuff. Write to Mark Simmons, 20 Woodbridge Road, Knowle, Bristol, BS4 2EU. Hi Tom.

C64 disk drive, must be in good order. Please send details and price to: Adrian, 62 Seven Acres, Parton, Whitehaven, Cumbria, CA28 6RF.

HEARTBEAT BB for deaf needs old and unwanted computers/modems for disabled users to communicate. Ring (0734) 352032 24 hrs. Sponsors welcome.

NEW enthusiast seeks desktop publishing and word processing original software for Amiga. Anything DTP considered. Also wanted: Scanner digitiser, A590 hard drive, etc. (0773) 749630.

THROWING it away? Pass them our way! Various computer items/equipment needed for disabled/housebound charity. Postage reimbursed. Tel: D.D.L.G. (0502) 518274, data./Voice 588505.

ATARI 65XE any games, mags, lists. Also copy of insert for Atari tape TXP7101. Write: Frank Card, 4 Lorraine House, Acre Lane, Wallington, Surrey.

WANTED any non working Atari ST/M/FM/E/Mega. Nothing refused, any condition accepted. Fair price paid. Phone Mark on (0495) 272092 10am-2pm or any time at weekends.

CHEAP modem (with manual), for Amiga, wanted by disabled man. Must be good working order. Fair price. Dave, 1 Thomas Wall Close, Sutton, Surrey, SM1 1SP.

WANTED Bubble Bobble, Shadowgate, Bards Tale I and II. Must be cheap. Also spherical Amiga only contact STU on (0423) 524046.

WANTED back copies of Atari ST Users from Oct 1989 to Jan 1990. Write: R. Frost, 11 Brandon Road, Felixstowe, Suffolk.

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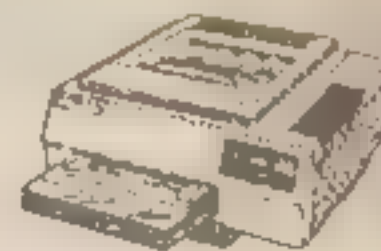
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WANTED MSX HX-10 Word Processor. Phone Penzance: 0736 64411.

AMIGA 2000 urgently wanted! Will exchange for my Amiga A500 with 1Mb RAM and Cumana external drive, plus cash adjustment! Tel: (0522) 681388.

ATARI XE games on cassette wanted. ■ good condition. Write to Andrew Gibbey, 1 Eastbrook Ave, Dagenham, Essex, RM10 7UL.

WANTED Psion Organiser. I also require cheap ST software and "C" programming books. Jones, St Ivy, North Road, Queenborough, Kent, ME11 5ET.

WANTED Vectrex control panel or complete system and Atari 2600 games cartridges. Cheap please. Phone (0296) 436172 or write to: 10 Torrington Road, Aylesbury, Bucks, HP21 8EG.

NEC PC8206 32K RAM for NEC PC8201A laptop (Tandy 100 Clone). Also PC8201-06

8K RAM chips for same. Any commercial software on cassette for PC201A also welcome. Phone: (0425) 73028.

AMIGA Provideo+/TV Text Pro wanted. Buy or exchange for games, utilities etc. Contacts also needed. J.G. Yeomans, 13 Wellington Close, Matlock, Derbyshire, DE4 3GE.

"KIDS and the Amiga" book wanted by Compute. Please tel: Ray on Nottingham (0602) 411537.

EMBEDDED SCSI hard drive wanted by GCSE student. Must be quite cheap. Phone (060871) 619.

WANTED: Cumana disk interface for Oric Atmos. Contact Ian: (0299) 271051 (Kidderminster).

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WANTED Amiga 500 also 2nd 3.5-inch external drive and 1Mb expansion unit. Ring Nick with details on Sheffield: (0742) 441608. Leave message on answerphone.

PRINTER wanted to use with CPC 6128. Up to £90 inc. carriage paid. eg Citizen 120D (or DMP 2000) type. Phone (0686) 624765 after 6pm.

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ST games wanted. Please send your lists to Richard Taylor, Tregear, West Downs, Delabole, Cornwall, PL33 9DY.

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AMSTRAD 1512 colour monitor - complete system considered at sensible price. Phone (0782) 516158 anytime.

WANTED Atari 800XL computer with recorder and joysticks. Must be in good condition. Write to Dean, 138 Townsfield Road, Westhoughton, North Bolton, BL5 2NT.

WANTED manuals, disks info for IT Andromeda Zita P. Will pay reasonable price. Write, 43 Golden Post, Belmont, Hereford, HR2 7BZ.

COLOUR monitor wanted, prefer Philips CM8833 or Commodore 10845 + lead for Amiga. Must be 30-40 miles of Maesteg £150 offered. Rob (0656) 736986 (Maesteg).

WANTED an Amiga A500. Cash offered. Phone (051) 424 1572.

WANTED MSX disk drive and interface will pay up to £60. Cash waiting. (0642) 564932 (Cleveland).

WANTED old copies of 'MSX Computing' and 'What MSX' magazines and serious software such as 'Aacko Desk' for MSX - 1/2. Cash waiting. Cleveland (0642) 564932.

WANTED 'Airbourne Ranger' for Spectrum. Will swap 'Hard Drivin' for it. ■ in good condition. Ring Steve: (0634) 722594 evenings.

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WANTED: Set of instructions for Masterfile (ver. 09 1982 Campbell System). For use on Spectrum. Micro drive version if possible. Tel: (0772) 424263.

I have the Bat Pack, will swap for Printer, disk drive, 1Mb upgrade or anything to do with Amiga. Phone Jon on: (0903) 761885 after 4.30pm.

WANTED: Black 14"-16" monitor styled TV for ST. Can offer around £60 if secondhand. Call Emmanuel on 071-249 0969 after 6pm. London area only unless you deliver.

WANTED Amiga with software. Will swap for PC with hard disk and loads of software. Tel: Darren (0494) 784322 (Chesham).

WANTED cheap C2N Datasette urgently needed. Do you have a spare to sell? If so, contact Ron, 51 Davidson Way, Livingston, West Lothian. Tel: (0506) 37002.

GOODS for the Amiga required. Any books by Compute and the database Prodata. Please state price when replying. George, 70 Offerton Lane, Stockport, SK2 5BS.

WANTED Word Processor (full package) including printer. Consider ■ offers. Send full details/prices. Postal replies only. Sorry no phone callers. Charles Trager, 7 Grantley Street, Glasgow, G41 3PT.

PLEASE will someone sell me an embedded SCSI drive cheaply? Phone 081-883 3812.

MSX 2 wanted in exchange deal with all my 64K (only) software thrown in. Also cheap Konami cartridges or swapped for tape loaders. Phone (0733) 268244 evenings.

CAN anyone sell us a C64 DB/invoice or similar D051541 program for business use? Tel (0205) 84319 or write: Alexanders, 11 Station Road, Midville, Boston, Lincolnshire, PE22 8HP.

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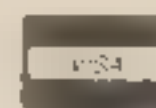
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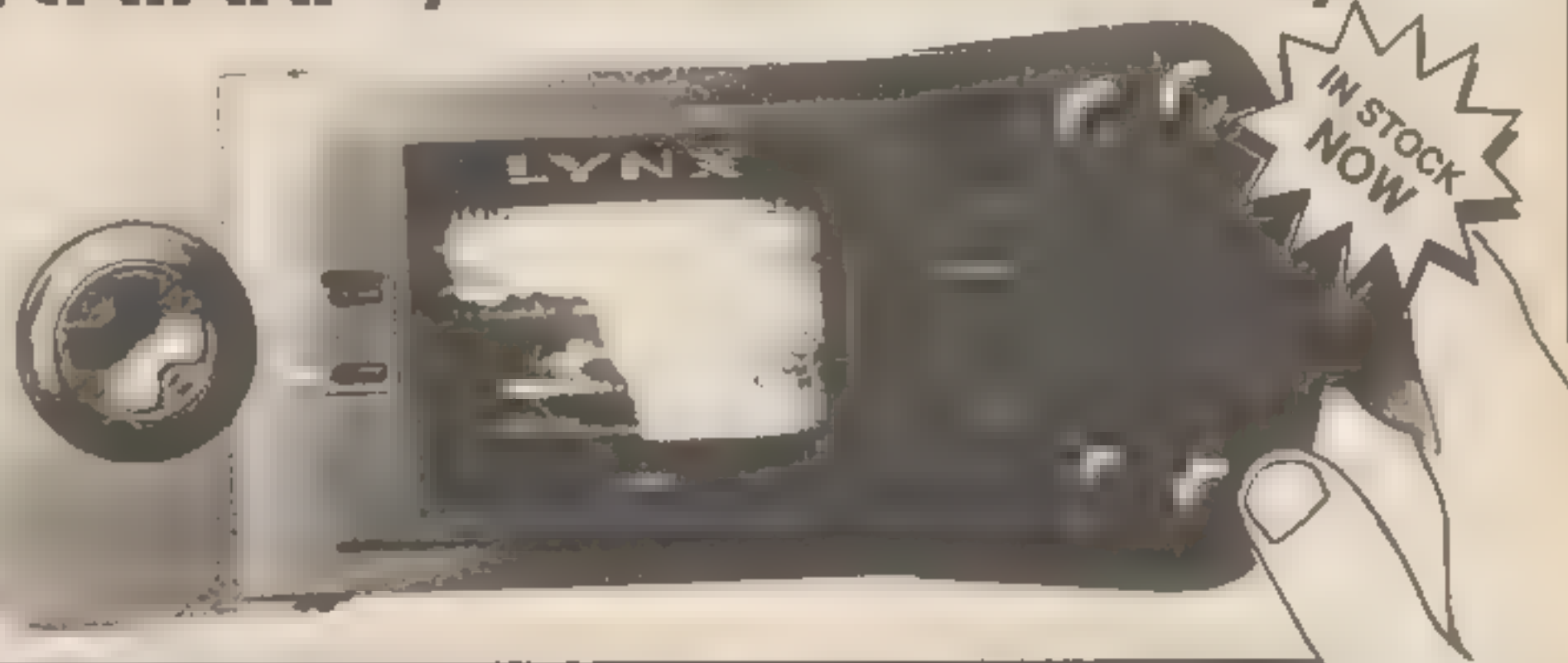
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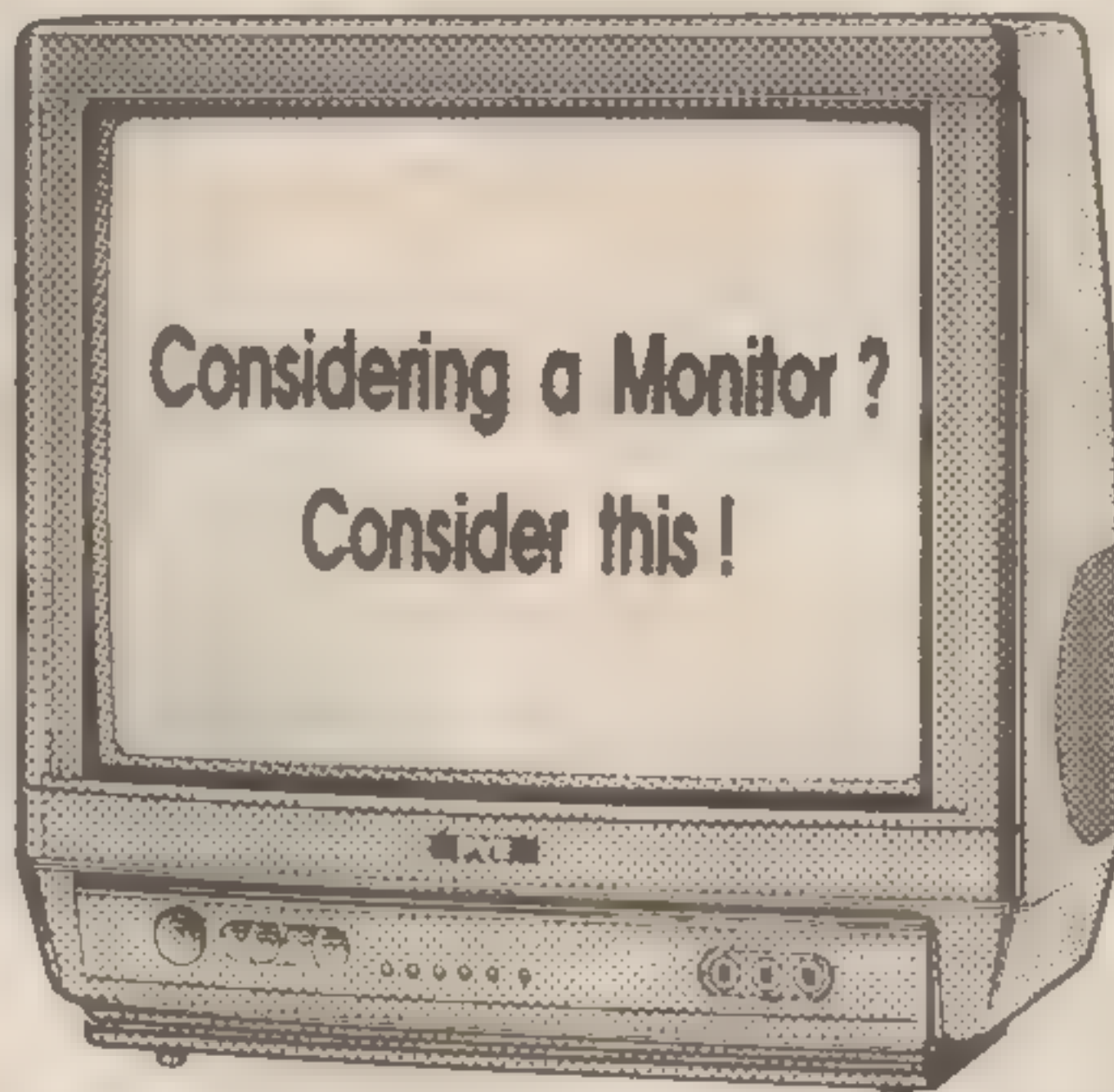
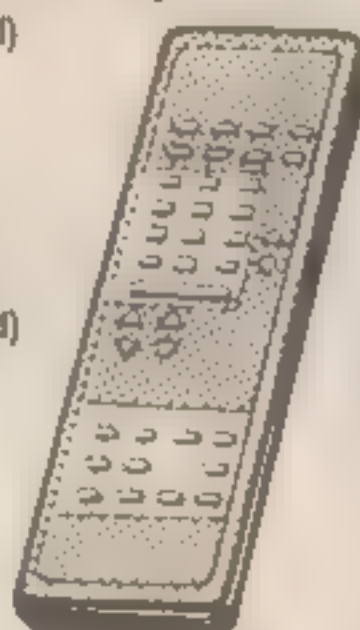
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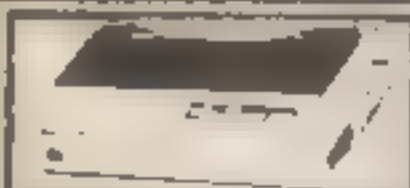
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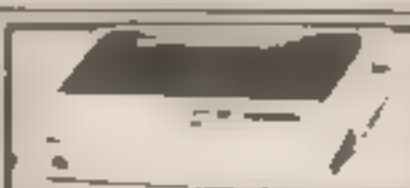
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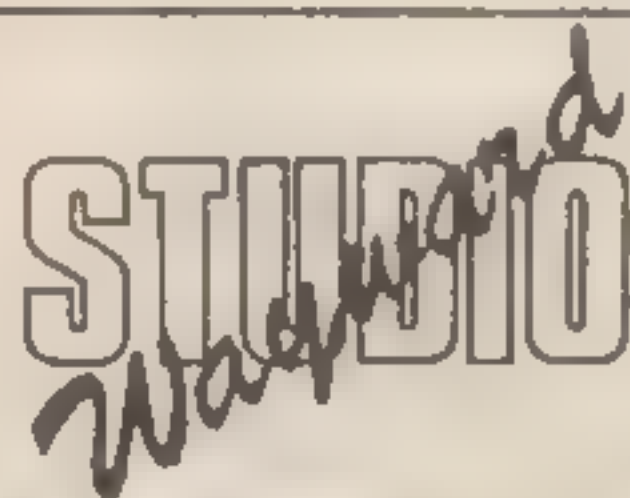
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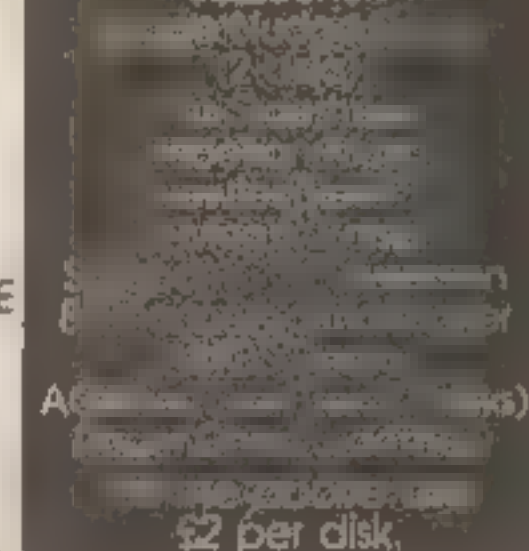
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Desktop publishing. You've all heard the phrase bandied around the computer industry, but how many have actually tried it? The creation of newspapers, magazines (including this one), sales brochures and the like has been performed on-screen and entirely electronically for a number of years. Fine. But for the home user, DTP packages have remained financially remote for all but those in the supertax bracket.

Software costing £100 or more and expensive hardware meant that prospective music fanzine, parish magazine and sports preview publishers had to remain firmly at the typewriter and photocopier. Now however, all that is about to change. ZZSoft of West Yorkshire have produced a desktop publishing package that everyone can afford. *EasyText Plus*, as it's known, is priced at £20, and provides all of the features necessary to produce some really quite stunning publications. Can't wait to buy it? Put your wallet away, because you can get a copy of *EasyText*, its predecessor, free from the public domain, and the forerunner of *Plus* is almost as good as the updated version.

EasyText enables ST owners with either colour or monochrome systems to produce quite complex page layouts on-screen with the minimum of fuss and application. The program doesn't have a

THE PD COLUMN

There is a lot of software out there available for the price of a disk. Our weekly column by Jerry Glenwright explores the world of the public domain.

paper manual, but there is a quite substantial selection of text files on the program disk detailing *EasyText's* operation - one read through these and you should be producing pages with the best of them!

After booting, you're presented with a window onto a frame and a standard GEM menu bar offering options to select fonts, point sizes, import clip art, open frames and so on. Like most desktop publishing packages, *EasyText* is frame based, meaning that to organise text and graphics on a page, you simply select start/cut from the edit drop-down menu, position the mouse at the point on screen you wish to open the frame and drag. If the frame isn't correctly sized or positioned, you can select it with the mouse by clicking, then resize or drag it to another position.



• Using clip art is a simple matter of clipping the picture you want with the frame function.

With a frame defined on screen, you can import ASCII or *First Word* text and pictures in a variety of popular formats. Eventually, you'll build up a page using text and graphic frames. Once at this stage, the page can be saved to disk or printed.

EasyText uses both system and GDOS fonts so there's plenty of scope

for good typography. And the artists among you can create pretty picture to illustrate the text or use some of the widely available public domain clip art.

The program is simple to learn and use and although there are one or two annoying little foibles such as not being able to flow text from frame to frame, on the whole, *EasyText* is usable and fun, and will give you a valuable insight into the world of DTP without a big cash investment.

CP/M

Disk Utility is, as its name suggests, a little disk utility written in the early 1980s when CP/M was at its height.

For the first time, small computer owners had floppy disk drives at their disposal, but these first drives were far from reliable and needed occasional ▶

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tweaking to save files and recover lost information.

Nowadays, drives are ultra-reliable but their owners unfortunately, aren't. How many times have you deleted the wrong file when performing a multi-file delete using wild cards? It happens to the most careful of us at some time.

Disk Utility enables anyone to recover deleted files easily by resetting the flagged delete bit in the file information tables on disk. But don't worry, you need know nothing of delete bits and file information tables – the program is entirely automatic. Simply type in the name of the deleted file and it's back, just like magic.

Useful, right? But that's not all *Disk Utility* can do. Adventurers, wouldn't you like to be able to step through a program's stored sectors on disk, to search for ASCII text messages? Think how useful that would be.

Find passwords, secret messages and clues to locations. It's cheating, sure, but you'll be able to salve your conscience by measuring the amount of work involved stepping through several hundred program sectors.

Ever had a valuable program that you'd like to make a copy of simply for safe keeping in case the original should become corrupted?

No-one likes to rely solely on one – the master – copy of a program, but many software houses protect their wares using intricate code-related meth-

ods that are just too complex for the average computer user to unravel. *Disk Utility* enables even inexperienced users to back up protected games and serious software with ease.

By issuing the program name to be copied and ensuring there's a clean disk in the drive, a brand new copy of any program will be made quickly and cleanly – but only for your own use. OK?

Other options include recovering crashed disks, rebuilding directory structures – even modifying the CP/M system run-time parameters. It's all here.

Disk Utility is a must for those whose burning ambition is to discover the secrets of files and disks and how they relate to one another. Begin a journey of exploration, get hold of a copy of *Disk Utility* today! ■

WANTED

Do you run a PD library? Whatever machine you deal with, drop a line to the PD column and we'll cover all the latest software on the market. The address is

The PD Column, New Computer Express, 30 Monmouth Street, Bath BA1 2AP.

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- Page 6, PO Box 54, Stafford ST16 1DR. Page was one of the first PD libraries and ranks with the best. The company also stocks a wide range of Atari 8-bit PD (reviewed in the coming weeks) and publishes *New Atari User* magazine.

CP/M

- The CP/M User Group, 72 Mill Road, Hawley, Kent DA2 7RZ. Help, advice and more PD than you can shake a stick at.

COMMODORE AMIGA

- George Thompson Associates, Dippen, Brodick, Ards, Scotland KA27 8RN. GTA stock a variety of products for Commodore's baby and have an excellent PD library.
- Softville PD Service, Unit 5, Stratfield Park, Elettra Avenue,

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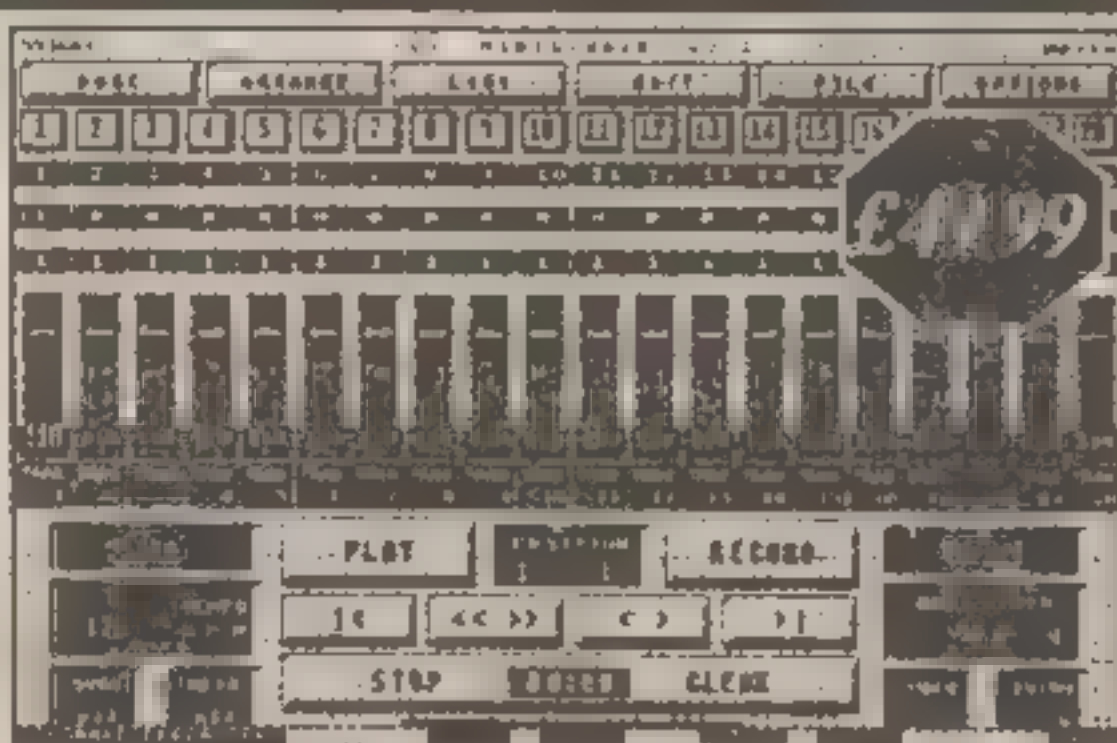
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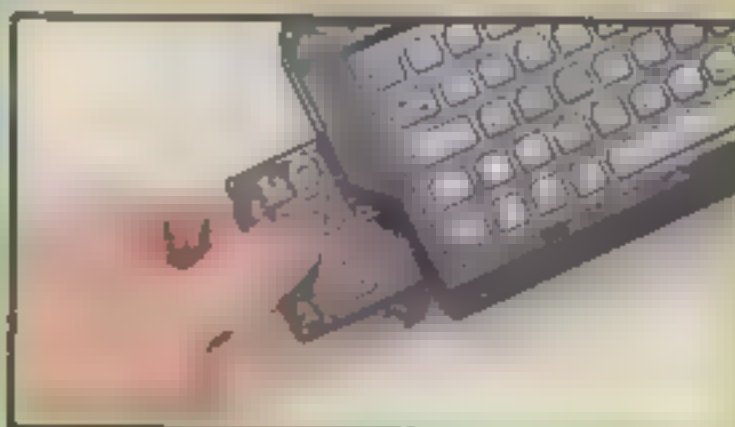
includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

SPREADSHEET

For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.

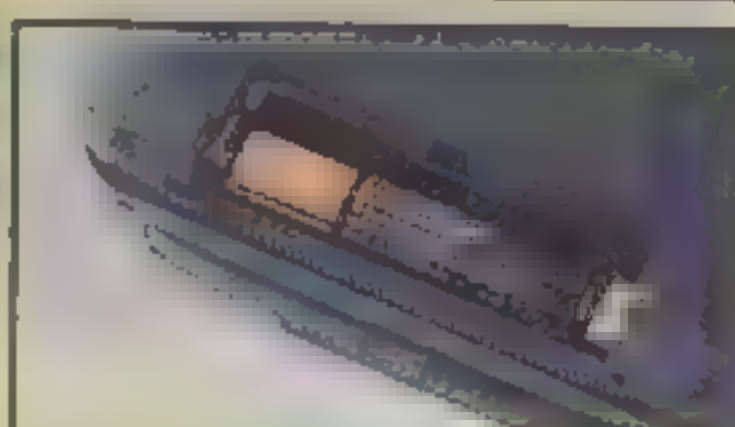
COMING SOON!

In addition to the excellent software built-in to the Portfolio Free Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serialcentronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built-in modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.



MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.



POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A "battery-low" warning and memory back-up ensure that information is not lost when the batteries are changed.



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Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

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SOUNDS ON THE SPECTRUM

When it comes to making music, the humble Spectrum is not exactly the first machine to leap out at you and make itself attractive. There are one or two problems with the machine, as we shall see.

For a start it has one of the worst chips for making sound, generating one channel with only one sound: bleep! Not a lot of good for serious sound creation. Other minus points include the 8-bit, Z80-based, architecture which is not made for ultra-fast handling of lots of musical data, no built-in MIDI, and a useable memory of only 48K.

Before you raise your hands in objection, the 128K machine does have MIDI of sorts, but it is very badly implemented and the existing music software that was made for the 48K would not run in 128K mode – thanks to some dumb internal memory allocation. The MIDI, by the way, uses a non-standard port, which is also the printer port, and is one way only – out.

There is a better sound chip in the 128 but that only brings it up to the same standard as the BBC and ST. You will remember that this is a three-channel sound chip, each channel capable of either noise or sound and really not too much to shout about in any case.

The trick that the large memory 16-bit computers do of storing sound samples and feeding them into the sound chip might work on the 128, except that you are still eating into the memory and you would need a program especially for the 128. There is little chance of it working on the 48K.

On top of all this, most of the programs are cassette based which is rather a slow process and always prone to the occasional hiccup in loading.

Another problem is that there is so little music software produced now that it is very hard to recommend things for you, the user, to buy. However if you are looking for an ultra low-cost entry into the world of sequencing and MIDI then the Spectrum has to be your best bet. There are of course user clubs, the second-hand columns and cheapo computer bucket shops, so knowing what to look for should help you considerably if you are starting out on the music trail.

Flicking through *Express* I notice that there are nearly always a few Speccys for sale and so getting started shouldn't be too much trouble. If it were me, I would go for a 48K version. Why? Quite simply because most of the software and hardware that I have come across does not use the full 128K of memory and runs in 48K mode.

OK. You've got your Spectrum, so what do you

Some of the best early music software was released on the Spectrum, and even now there are second-hand bargains to be had. Jon Bates investigates what must be the cheapest MIDI set-up you can buy...

buy? If you want software to use the internal chip on the 48K it is rather a difficult question to answer. Since there is to my knowledge no active producer of such software, it is a case of searching through the discontinued lines in shops.

Sadly many of the small software developers have long since upped stumps and gone, so if you have

innards of the sound creating chips of most synthesizers and tone modules, which makes creating sounds rather fun instead of a myopic affair via an undersized LCD. There were programs available for you to program DX7s, DX100s, FB01s and the Casio CZ range. There was also a rather futuristic librarian program (see Not a Lot of People Know That)

There are two other MIDI interfaces that demand attention. Cheetah launched its own MIDI interface and sequencing software.

The sequencer was quite well thought out, with some smart routines that stripped the incoming MIDI data of any superfluous data – you could request it to ignore things like touch sensitivity and pitch bend as well – so that you made maximum use of the memory available.

However there was precious little else in the form of other MIDI software and so perhaps it is not one to put at the top of your procurement list.

The real superior interface was the RAM Music Machine. This had a full complement of MIDI ports, but the real stinger was that it could also sample – and those samples could be used as part of the sequence. All samples and sequences can of course be stored.

Another first for this box of tricks was its ability to play samples from an external keyboard. Although limited to two notes at any one time you can nevertheless play them at any pitch from an external MIDI keyboard. The original developers of RAM were not really interested in writing additional software for it, but were quite content to leave that to third-party programmers. The flexibility of the hardware has led to a whole host of programs being written for it and very quickly a users group was formed.

The RAM Music Machine Club is still going strong and has access to most programs written for the interface. This includes goodies like Microdrive conversion routines, a superior song editor which will let you cut and paste blocks of the song, several synthesiser voicing programs, and a real-time recorder.

There are also programs that will split your MIDI keyboard up into different zones. For the very reasonable fee of £6 per annum you get four cassette-based magazines with articles, hints and tips on one side and



• To do any serious music work on the Spectrum you need an interface. From left to right these are: the RAM Sound Machine, the Micon MIDI interface and the Digital Sound Sampler.

problems you may well not find a sympathetic shoulder to cry on. Although some rather ingenious programming got the absolute maximum out of the internal sound, it is in other areas of music that the Spectrum was surprising well advanced.

THE SPECTRUM AND MIDI

It wasn't long before MIDI interfaces plus software appeared for the Spectrum. One of the first out of the hat was XRI Systems with the Micon interface and its first piece of software – a somewhat laborious step-time music sequencer. Laborious because a step-time sequencer is one where each note is typed in individually with length and pitch defined every time.

However it wasn't long before other programs appeared, usually written by third parties with the blessing of XRI. These included a real-time sequencer and a whole host of synthesiser programmers. Quite apart from recording and playing back pieces of music, MIDI will also allow you to have access to the intimate

TRUM AND SAM



SERIES

Roland), who can be contacted at PO Box 49, Dagenham RM9 5NY, and it will set you back £19.95 – or £3 for a demo tape.

PLAY IT AGAIN, SAM

Miles Gordon Technology's new machine, the SAM Coupé, deserves a mention here. It is 8-bit and will run Spectrum programs. However it would be a rather arduous task for it to run Spectrum hardware since the edge connector ports do not match up.

The good news about the SAM Coupé is that it has MIDI ports (one each of MIDI IN and MIDI OUT) built-in as standard, has 256K of memory, runs very fast thanks to the 6MHz clock and has a Philips SAA1099 stereo sound chip with six channels of sound plus two of noise, an eight octave range and, of course, a stereo output. All this for well under £200.

Given both good sound generation and decent MIDI software, the SAM will be a very versatile machine indeed.

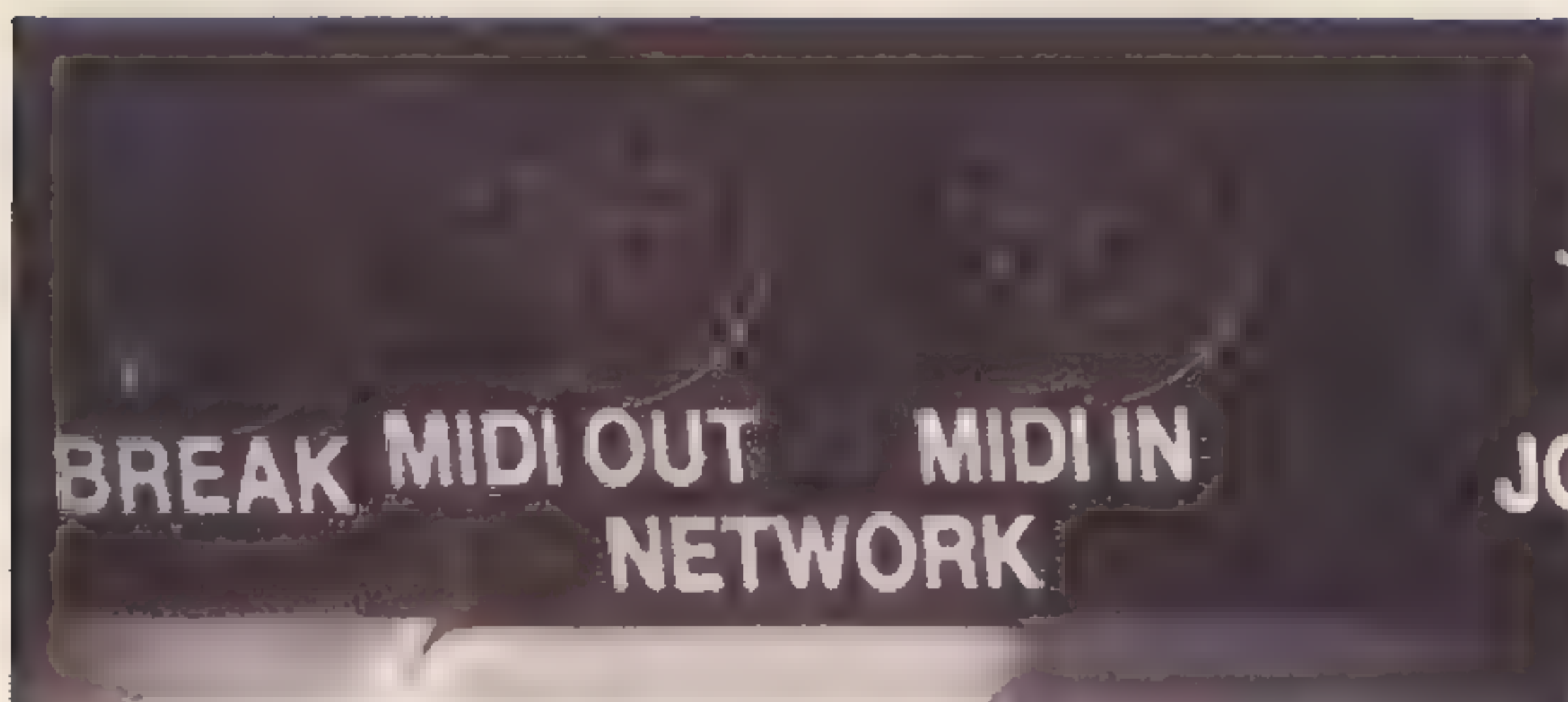
Unfortunately there is as yet no software to take advantage of these wonderful features, so SAM owners have to look longingly at their MIDI ports and wait.

There is a lot of software on the drawing board, however, and overtures have been made to software houses working on 16-bit machines for conversions of their software to the SAM. With luck we should see music and MIDI programs for this low-budget machine at the end of the year.

HARDWARE WAIT

It will, however, probably take slightly longer before hardware add-ons such as the ubiquitous sound sampler become available. Clearly to use a sampler to its full potential a disk drive will be needed, and probably an upgrade to 512K of RAM. By the time you get to that specification level, you are talking about the SAM costing the same as an ST, so its advantages become less obvious.

Nevertheless the SAM, with the development of suitably professional MIDI sequencing software, will become the machine of choice for budget music work in a few years time. ■



• The SAM Coupé comes with built-in MIDI ports, but as yet no-one has developed any software to make use of them. Music programs are due out by the end of the year.

a program on the other. The club is run by Sean Saunderson whose contact number is listed in the Best Buy box.

THE SPECTRUM WITHOUT MIDI

There were bolt-on devices that didn't use MIDI. Two of these came from Cheetah, the first being its own sampler. Although quite proficient, it was a self-contained program that was not compatible with anything else. You could sample, edit and play back but that was about it.

The other was the rather incredible *SpecDrum*. This was a drum sequencer which could be programmed in either real or step time, and you had a choice of drum kits to load into it. Drum patterns were shown on an easy-to-follow grid and the sound was created from short samples of real drums. Adherents to the school of rap and acid house should really try this machine out as the sounds it kicks out are ideal.

Its drawbacks for the home musician could be the

lack of MIDI and a single mono output. However there is an interesting way you can put the drums onto a multi-track machine by using the *SpecDrum*'s own sync code. With a bit of fiddling you put each drum down on a separate track and they will all play back in sync. By using a cheap time lock code like FSK you can still use a MIDI sequencer with it.

There were several attempts to improve the sound of the Spectrum, generally along the lines of a bolt-on box. Unfortunately the box inevitably contained the same chip as the BBC which is rather like upgrading your wheelbarrow to a dumpertruck.

Although it is so new that we have yet to clap eyes on it ourselves, there is a music notation program available for the 128K Spectrum called *Music Writer*. It makes use of the internal sound chip but is a step-time entry program. As probably the only new music software for the Spectrum that stands on its own, it is unique.

Music Writer is produced by Rowland (no, not that

NOT A LOT OF PEOPLE KNOW THAT...

...for several years the best home music notation program was available only for the Spectrum. Called *Music Typewriter* it was marketed by Romantic Robot. The quality and style of its notes was truly amazing and even now is only equalled by professional scoring packages running on Macs.

...the Spectrum was the first home computer to have both sampling and sequencing in one package; the RAM Music Machine. This is something that is now being bragged about by machines like the Mac and Amiga – but the Spectrum beat them by several years.

...the first universal synthesiser librarian appeared on the Spectrum in 1986, beating the competition by several years (take note ST, Mac and Amiga owners!). Working with the XRI interface this rather clever routine would configure itself to work with any synth. Once it had set up its memory you could extract the contents of the sound library of your and everybody else's synthesiser and have all the sounds stored and re-ordered into useful banks by the Spectrum.

...the RAM Music Machine is no longer produced. The good news is that Datel has bought up the entire stocks and will let you have one for just under £50.

...the *SpecDrum* is also out of production but a call to 081-446 7170 will put you in touch with a man who has a couple of hundred to get rid of.

BEST BUY

RAM Music Machine
£50 • Datel • 0782 744707

With the amount of additional software available, this has to be the best bet for the Spectrum – although it is unlikely to convert to the SAM Coupé.

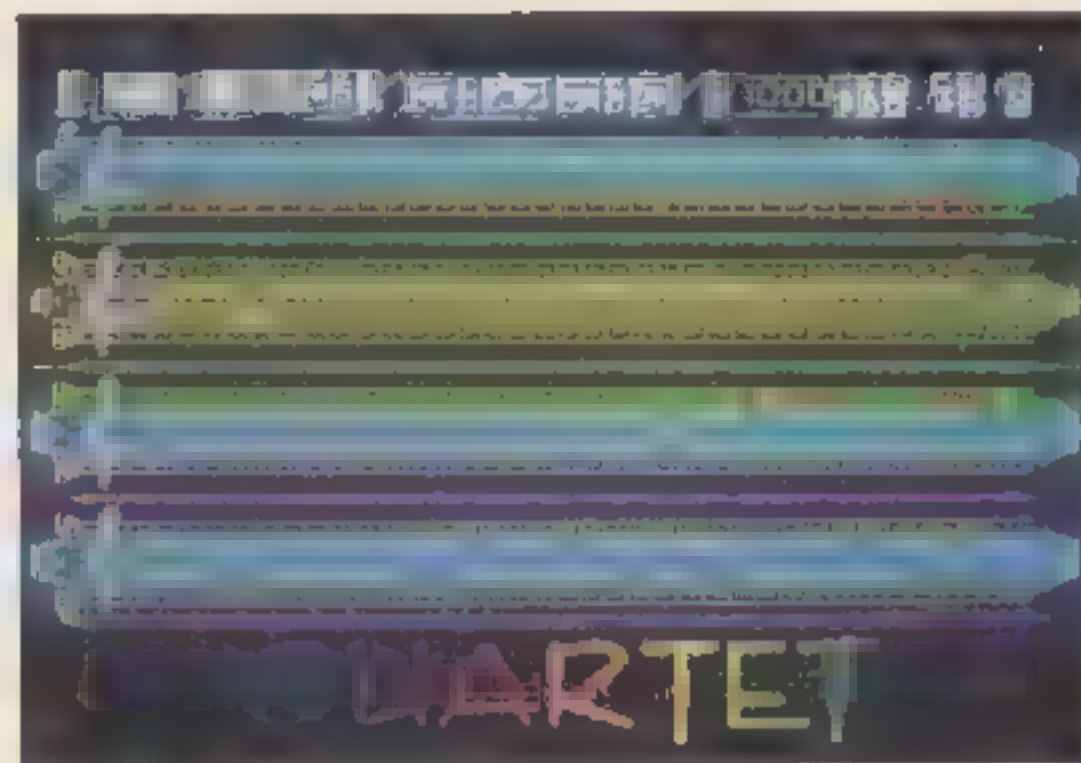
It also has a dedicated user group who provide advice and cassettes for use on the device. You can contact Sean Saunderson of the RAM Music Machine Club on 05242 62258

NEXT WEEK

Around 10 of the best of music software for the Mac, BBC Archimedes, MSX and Amstrad CPC. If one of these is your machine, tune in to next week's music special.

Making music on the Amiga needn't be an expensive affair. OK, so if you want to make it big within the music industry, appear on *Top of the Pops* and be patronised by uncle Terry on the *Wogan* show, then you're going to have to fork out for some serious gear. However, for most of us, the chances of making it big are about as slim as an Englishman winning at Wimbledon.

The Amiga features one of the most sophisticated sound chips available within a personal computer. With built in digital-to-analogue circuitry, the Amiga offers the kind of sampling capabilities that would have been more at home in a recording studio than a home micro a few years back. Indeed, even today the Amiga's sound



• Quartet has a jazzy user interface giving fine control over sound samples. Don't expect too much from the MIDI, however.

GETTING IN TUNE

capabilities can be heard on several chart-release albums. With such a pedigree, why bother with expensive MIDI hardware? All you need is the right software and a sound sampler, and international fame, all night parties and tabloid scandal could finally be within your reach. Enter Amiga *Quartet*.

Anyone who keeps an eye on the world of ST music will no doubt have heard of Microdeal's *Quartet*. Since its release late last year, ST *Quartet* has won many devoted followers who swear by its music-making capabilities. Sounds pretty good so far. However, prepare yourself for a shock – Amiga *Quartet* is nothing like its ST parent.

Amiga *Quartet* is a sophisticated music composition tool that uses Amiga sampled sounds as its instruments. While the program does include support for MIDI users, the Amiga's sound capabilities take centre stage. Although *Quartet* is basically a sequencing package, the program cannot be used to sequence external devices (such as keyboards and sound modules); MIDI support is therefore restricted to entering performance data only.

MORE THAN FUN

For most users, *Quartet* will be used for one thing – to create music for the fun of it. However, *Quartet* can also be used for several other applications. Most immediate of these is the creation of music within your own programs. Thanks to some clever forward thinking by the program's author, Dan Lennard, the distribution disk includes source code in both *Devpac* and *Seka* formats to allow you to include *Quartet* tunes within your own assembly programs. Nice one, Dan.

Even if you're not a programmer, you can hand out *Quartet* tunes to all your friends using the program's freely-distributable player program. The *Quartet* demo creator allows you to combine any IFF format picture with a *Quartet* tune to make your own demos. Expect to see a flood of *Quartet* demos turning up in the PD libraries!

Also, because *Quartet* can be told to start playing by an external MIDI sequencer, there is no reason why the program couldn't be used within a professional music environment. At last there's an alternative to EiderSoft's atrocious MIDI sample player program, *ProMIDI Plus*.

WHAT'S THE SCORE?

At first sight, the editing screen of *Quartet* looks very similar to a conventional scoring program such as Aegis' *Sonix*. However, *Quartet*'s editing system is very

different. It's been along time coming, but Microdeal has finally released the Amiga version of its highly-successful ST music package, *Quartet*. Jason Holborn checks it out...

different. If you've ever used programs such as the infamous *Sound Tracker* or Andreas Tadi's *Game Music Creator*, then you should feel fairly at home with what is initially a rather strange way of working.

FOUR BY FOUR

The main *Quartet* editing screen consists of four grids that represent the four sound channels of the Amiga. Placing a note is simplicity itself.

All you have to do is select the sampled instrument you require by clicking on the appropriate bank/voice number and then point and click anywhere on one of the four staves (grids). Instead of displaying the note in the conventional manner (crotchets, quavers, etc), *Quartet* displays the note as a two-figure number. The first figure represents the sample bank number and the second, the voice number. Obviously, due to restrictions within the Amiga sound hardware, each channel can only play one note at any one time.

Notes can also be input in real time from a MIDI keyboard, which can be a time saver for those of you who are lucky enough to own such a device. This is perhaps one of the major advantages that *Quartet* offers over similar systems such as *Sound Tracker*. Unfortunately, *Quartet*'s MIDI handling is far from perfect, so don't expect the kind of recording resolution and quality found within dedicated MIDI sequencers such as *Music-X*.

When you have entered your piece of music, *Quartet* includes various tools to help you manipulate it. Once selected, any section of music can be cut, copied, pasted and even transposed. One particularly nice feature is the sample duration option which allows you to see precisely where a sample will stop playing on the on-screen grid. This way, if you're into adding sampled effects and vocals to your music, you can obtain pleasing results with a minimal amount of hassle.

DIGITAL DELIGHT

As already mentioned, *Quartet* relies heavily on Amiga sound samples to work its magic. Although owning a sampler is a definite plus, it isn't a necessity. For starters, the package comes complete with a disk filled with a wide selection of sampled instruments ranging

from drums and conventional wind instruments, to modern synthesisers and much more.

Once a sample is loaded into *Quartet*, it can be edited within *Quartet*'s built-in sample editor. From within this screen you can alter the start and stop positions of the sample, remove marked areas from within a sample (the program then automatically joins up the two ends) and turn automatic looping either on or off (therefore allowing you to loop sampled rhythms).

However *Quartet* really starts to shine when used in conjunction with a sampler. The program directly supports sampling from any AMAS-compatible sampler (such as *MasterSound*), therefore allowing you to grab samples and use them directly within your scores – just think, no more having to mess around within sample editors. However, in practice a sample editor such as *AudioMaster II* is a necessity.

CONCLUSION

I must admit, it wasn't overly impressed with *Quartet* the first time I loaded it. However, after continued use, the true power of Microdeal's program starts to shine through. The ease with which tunes can be practically thrown together rivals even Stock, Aitken and Waterman's ability to produce music with little effort.

However, *Quartet* certainly isn't the Amiga music package to end all packages. It would have been nice if more features had been implemented for the professional musician.

Although Microdeal is aiming the product at the average home user with an interest in music, past experiences have shown that such programs often end up in the recording studio as well! For starters, MIDI support could have been extended to include external sequencing and MIDI time code. Ah well, perhaps that's something to look out for in *Quartet Professional* (if such a product ever arrives).

Gripes aside, *Quartet* is a lot of fun to play with. Used in conjunction with a decent sampler and sample editing software, you'll be knocking out tunes in no time at all. ☺

Quartet costs £49.95 and is available from Microdeal on (0726) 68020. It runs on all models of Amiga.

POSTAGE PACKING £2.50. NEXT DAY DELIVERY £10.00

When a programmer thought to make the cursor mobile by the use of keystrokes, the first pointing device was born. The ability to move a cursor around the screen and hence quickly to an area of work soon caught on, and it wasn't long before the keys for moving the cursor became a cluster on their own.

In a word processor the ability to go straight to a point in the text, and in a spreadsheet the facility to jump straight in to a cell, were soon taken for granted. But as home computers headed for complex games even better pointing devices were required.

THE MOUSE

Then along came the mouse. An upside-down miniature trackball with buttons is how the computer press described it at the time, but despite the scathing comments it soon became the industry-standard pointer –



- The new generation of mice have no tails. (above)
- A plethora of peripherals for every use. (main picture)



MAKING A POINT

and more recently has appeared as standard on home machines too.

The mouse met with an early farmer's wife in Apricot when the F1 mouse lost its tail to become infra-red like the keyboard. This mouse carried its own power supply and an infra-red transmitter, making it a very heavy but nonetheless mobile device.

Designers needed accurate plotting and so the graphics tablet was born. The method of operation varies from model to model, but the theory is the same. A pen, stylus or finger is moved across a flat area that can be any size from about A6 upwards, and a sensing device within the pad accurately triangulates its position. Around the periphery of the pad there are often tools for doing the more common tasks. In the design of

We've come a long way from the days of moving around the screen with arrowed keys. Keith Pomfret tells the tale...

circuits for example, a frequently-used chip or component can be placed in one operation.

The operator can position icons, components and lines accurately, and watch the build up of the design or circuit on the screen.

MAKING LIGHT OF IT

A light pen or wand was a device using photoelectric or fibre optic technology to point at the screen as part of a decision-making process. It could be used to choose

from menus but more commonly appeared as either part of an art package allowing true drawing on the screen, or as a utility where graphs or other on-screen data had to be altered.

A fine example of the light pen in use is on the Australian Fairlight, a computerised musical instrument where the light pen can manipulate the on-screen image of a sampled waveform. This allows the musician to see a representation of the sound that they are working on.

WEIRD AND WONDERFUL

Mercury is a liquid at room temperature and conducts electricity. The pointer designers were quick to grasp this fact, and pointing devices and joysticks that didn't have to be attached to the table were developed. By setting mercury switches at angles to each other, full three dimensional control was attained. In its simplest form, the mercury pointing device is a joystick attached to a long cord and grasped in the hand.

By altering the tilt of the hand, mercury switches are triggered and the stick transmits the data down the cable to the computer. This form of control has been used as a games joystick, pointer controller and design tool. In its most complex form it is a totally remote infra-red device that is held in the hand and used in a 3D graphic design environment.

JOYSTICKS, BALLS AND BEAMS

A joystick doesn't generate much excitement nowadays, but when they first appeared the ability to control the screen with something that was related to the direction of the cursor was a great step forward.

A further development was the trackball, a captive ball device that moved the cursor or pointer around and was inherited from the early days of the video arcades. Its first major application was as a missile aimer used by arcade addicts to

save the city from bombs.

Touch-sensitive screens were developed, which consisted of a matrix of infra-red light beams across a monitor screen.

As the finger broke the beam, the matrix worked out which beams had been broken and acted on the closest instruction on the screen.

This was useful for information services where a quick succession of choices could take you from decision to decision.



- Infra-red and wireless: the new-age joysticks are here!

WHAT ABOUT MY MICRO?

Should you buy a Fairlight, you will get a light pen. A portable Macintosh comes with a captive trackball. For the rest of us it's a mouse, a bundled joystick or at worst a blank port imploring us to add to it.

PC

Every peripheral, mouse, controller and pointer has been attached to the PC at one time or another. The variety of add-on ports can make compatibility between hardware, machine and software a headache. There are screen masks to make the screen appear touch sensitive, beam grids to do the same and a simple version of the reverse turtle for children.

The watchword with PC pointers is compatibility. Make a checklist of all the software that needs to run with it and your hardware configuration and check that the pointer will work with it.

AMIGA

The Amiga comes with a sometimes fragile two button mouse and two ports for joystick, trackball or mouse. There are standard RS232 and parallel ports and the CAD applications that are beginning to appear on the Amiga should guarantee a good variety of strange peripherals.

ST

The ST has a mouse as standard and many people use joysticks and trackballs to enhance gameplay but as yet it isn't established as a serious contender in the potty pointers stakes.

CPC

A single joystick port and an expansion bus left Amstrad's 8 bit CPC with the ability to handle most peripherals. Mice, light-pens, even Wild West style Colt 45s have

grown out of the machine.

C64

A joystick, a mouse, a scanner, a paddle and a trackball can be added to the C64

SPECTRUM

The Spectrum is an odd beast in that the original specification made no provision for add-on joysticks or mice, and in fact the original machine with its rubber mat keyboard and awkward cluster keys made it difficult to do any but the most basic manipulation. Interfaces allowed generic sticks and paddles to be added but it was only when Amstrad took over it added a pair of ports on the Plus 2 and Plus 3 models that exotic mice appeared.

AND THE REST

Most computers can attach some sort of



• The PC has a plethora of peripherals. And the Wico EasyStick is one of the latest and handiest of the lot.

joystick and mouse, but the range of pointing devices is wide and growing as new applications come along.

MORE WONDERFUL

A couple of years ago there was a total environment project where volunteers were placed in a room surrounded with banks of monitors which displayed an environment to them. Attached to their arms, legs, head and extremities were thin wires that fed movements back to a central processor. By fine tuning the system it was found that they could manipulate 'objects' seen on the screen and, in a demonstration, one of them was shown to move pieces on a chess board.

At that time, the quickest processors were unable to keep up with all the complex mathematics. More recently, with faster, more efficient, processors, a similar idea has come to light. Instead of the full body being attached to the system, just a hand placed in a glove and the movements of the single hand interact with the environment.

THE EYES HAVE IT

Another recent development is a sensor that tracks the human eye, following the pupil and relating this to the area of the monitor that is being looked at. This could be of use to the disabled as an alternative to conventional pointing devices. However, with the advent of faster processors, multi-tasking and multimedia, it is more likely to find a home in interactive games, where a

player could lock on to a target by simply looking at it – and fire weapons by deliberately blinking.

THE WRITE STUFF

A favourite dream of writers has been to write with a pen and have the results magically transformed into perfectly formatted text. We are not quite there yet, but a recent design trend suggests that the true electronic notebook with a stylus instead of a keyboard will soon be with us.

A stylus or pen will be moved across a pad something like a graphics tablet and the words formed will be echoed on the screen. The pointing ability is well within current technology, but the reading of a person's handwriting and translation to text is more difficult. Current research suggests that each person will need to input examples of their own handwriting so that the program can learn to recognise the user's individual style.

Security conscious companies in the US have not been slow to realise the implications of this, and a program has been developed that stores a digitised image of a signature and then compares it with a signature drawn by a mouse or stylus on a pad. If too long is taken or there are too many differences from the digitised original, access is denied to the system.

A bank was reported to be considering a light pen system as an alternative to PIN numbers for cash machines. However, trials with slightly inebriated customers showed that the cash machines refused to recognise customers' signatures and pay out.

Similar technology to that applied in mice and joysticks is being tried out in the US – as a test of people's ability to drive and carry out other complex tasks.

There is a bus company in California that makes its drivers play a short pointer-driven game before allowing them to take to the road.

Other similar devices have car drivers using a pointer to chase a moving object around an LCD video screen to prove their ability to drive safely.

TURTLES AND TEST TRACKS

When the computer language Logo was developed as an educational aid, it allowed children to enter into a console directions for a large, wheeled turtle. This had a pen in its mouth and so they could draw their directions on a large sheet of paper on the floor.

Spirograph-like designs and repeating patterns were drawn easily and the structure of list processing was learned in a game scenario.

More recently the turtle was made interactive. Sensors inside it worked out where it had moved to, echoing its position on the screen and as a series of commands in a text window.

Taking this to its logical conclusion, a US company manufacturing damping and suspension products for cars used in-car sensors on a test circuit to relay directional data back to a computer. The computer was running a list processing language with many similarities to Logo – which makes the car in question the largest pointing device of them all. ■

SOME COMMON POINTING DEVICES

- A cluster of cursor keys
- A joystick
- A mouse
- A touch-sensitive screen
- A graphics pad or tablet

SOME UNUSUAL POINTING DEVICES

- A mouse with a mini touch sensitive pad instead of the normal ball.
- Multi-button mouse with definable functions
- Mercury-switched joystick.
- Joystick with infra red control
- Backwards turtle
- Light pen
- Stylus writing pens.

POINTERS THREE

Pointing devices can be divided into three main categories with well-defined parameters.

- Those which fulfill a steering function such as a joystick or a paddle in a game. Here the emphasis is on the change of direction and fine movement isn't usually necessary.

A joystick can be controlled by directional switches or two potentiometers and in the main, only gives up to eight definite directions and a 'fire' function. A paddle is a potentiometer device that purely

moves a bat or other pointing device in one direction.

Although joysticks are usually associated with games, there are other applications. For example, a MIDI music program uses a joystick rather than a mouse as it is more convenient for on-stage work.

- Mice and trackballs are used where directional accuracy and proportional movement are combined with an executive function. A good example of this is a desk top publishing program where a column

needs to be set accurately and moved around.

The buttons on the mouse or trackball then allow a function to be chosen or acted upon. The mouse is especially useful for accessing 'pull down menus' and acting on the lists there included.

- Then there are the odd ones: touch screens, strap on cursors, cluster manipulators, graphic tablets, touch sensitive mice and all manner of other weird and wonderful one-offs.

TECH TIPS



ST PC?

After using an IBM PC at work and an Amstrad compatible at home for several years, I have decided to 'upgrade' to an Atari ST. I read a few issues of an ST magazine, to see what the best deals were and then I went along to a local micro shop and bought one of the Explorer packs.

I've used my new ST night and day every day since I bought it and am very happy with my purchase. I do, however, have one huge problem and that is I have many hundreds of 5.25-inch disks containing valuable word processed files, and other data.

I have also invested a substantial amount of money in quality programs for the PC. I don't have the machine itself anymore (I sold it to help pay for the ST), but I would very much like to know if I can make use of all this software.

A friend told me that there are such things as PC emulators that will enable me to run my PC stuff, but he's pulling my leg, isn't he? Are there such things? If so, where do I get them from and how much do they cost? Your help would be greatly appreciated.

John Petal, Kingsbridge, Devon.

Don't worry, your leg isn't being pulled! The ST, perhaps more than any other computer, has been used to emulate a large variety of other machines. With its fast 68000 central processor and high-quality display, the ST is an ideal starting point for the difficult task of emulation.

Indeed, the ST currently has a range of hardware devices and clever software packages available facilitating the emulation of the PC, Apple Macintosh, CP/M, Atari 8-bit, Sinclair QL – even the Commodore Amiga, although this latter is in fact a jokey 'shell' program which can't really run Amiga software at all.

So, what do you need and how is it done? Well, emulation is usually implemented in two ways: software or via a combination of hardware and software. PC, CP/M, QL and Atari 8-bit emulations are all implemented using the former method, while Apple Mac emulation, as well as quality PC emulation, is performed using combined hardware and software.

PC-Ditto, which is available from Power Computing – phone 0234 273000 – is one of the finest software-based PC emulators. For just £69, PC-Ditto will transform your ST into a fully-fledged, CGA PC which will run all the popular

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Uncle Tech Tip, he'll see you right. Send your sorry stories to Uncle TT, 30 Monmouth Street, Bath BA1 2AP. There's a prize for the most pitiful tale.

PC applications, albeit very slowly. Software emulators have a lot of work to do, and the fact that they work at all is a fine testament to the quality of programming involved and to the sophistication of the ST. If your requirements for PC emulation are occasional, then go ahead and choose PC-Ditto.

If you want to make serious use of your PC software and plan to rely on the 'PC', then you'd be better advised to shoulder the expense and buy a hard-

ware emulator. Several excellent products have appeared on the UK market in the last year or so, and on the whole these devices provide super-reliable emulation at speeds which beat the standard PC hands down.

Perhaps the best emulator for those who don't fancy opening up the ST and soldering circuit boards is Supercharger from Condor Computers – phone the good people at 0734 810066. An encased V30 processor with on-board

RAM and a maths co-processor socket that simply plugs into your ST's DMA port at the rear of the machine is yours for £299.

Supercharger is fast and powerful and provides valuable little wrinkles such as the ability to switch between MS-DOS and GEM mid-flight and to switch back without ever leaving the PC program currently running. All in all, Supercharger is a very superior emulator at an exceptionally reasonable price.

The case of the overheated supply

I have a Commodore Amiga with a second disk drive, but I would really like to add another. I cannot afford a hard drive, and I am torn between conflicting reports.

I have read many times in an Amiga magazine that the Amiga power pack can only happily handle one external drive. OK, fine; but out of curiosity I phoned Datel Electronics and asked if I can daisy-chain floppy drives, using the Amiga's power pack and got told: "Yes, no problem at all..." Needless to say, I was totally confused.

I am not knocking Datel Electronics. All I want to know is, can I or can't I?

An interesting thought is that if you can only have one external drive using the host computer to power it, how would it be affected if a twin drive was used?

If indeed you can only use one drive, why is it that when external drives are advertised for the Amiga you do not see them advertised with their own power supply unit?

I think I would buy one just to be on the safe side – Amiga power packs are



The Commodore Amiga – tricks for using it without a hard drive on offer from the Unc.

expensive. If only I knew where to get one from. Could you help me with this dilemma Unc?

Mark Palmer, Folkestone, Kent.

The answer I'm afraid, isn't quite as black and white as that. You could add a third drive, and the Amiga would be able to power it, but the extra demand for current would put the power supply under a great deal of strain – they're designed to power two drives.

If you're an avid reader of mail order advertisements,

such as those placed in Shopping Express by Evesham Micros, you may have noticed that second floppy drives advertised for the Atari ST come with power supplies.

The mechanism of the ST's floppy is exactly the same for the Amiga – perhaps you ought to ask Evesham if it will sell you an ST drive complete with power supply but with the correct lead to enable connection to an Amiga?

It may cost a little more than the standard Amiga version, but it's better to

spend a few pounds and have your Amiga's power supply remain intact. They are expensive to replace.

As a final thought, why not try one of the many RAM disk programs available in the public domain?

These programs create a third 'logical' disk drive which is really a small portion of your computer's RAM memory, but which can be accessed, copied to and generally treated as though it were a real disk drive.

For quality Amiga PD, check out the Express PD column in Shopping Express.

Plea for help

I am terribly ignorant about computers (*nothing new there, I am too - Uncle TT*). I fear I have positively ruined two new computers in the space of less than two weeks!

When we switch on there is a ringing noise, eventually the menu comes up but the pointer is stuck and cannot be moved by either the mouse or the keyboard. On loading a game, the TV rings for a while then the credits come up, but the game cannot be started.

The tale begins with my buying an Atari STFM two weeks ago. On our first evening we did some incredibly simple programming such as print 'michael' and during the session a message suddenly appeared saying something like 'whatever you just did corrupted the FIND...' 'BUG'.

I felt sick and thought: 'Oh God! We've ruined the computer'. I had no idea what the message meant or what we had done. Anyway, we carried on and everything seemed fine. Word processing, formatting etc., all worked OK.

A couple of days later, the problem of the ringing started again. Nothing would work. We were devastated (*a slight exaggeration perhaps? - Uncle TT*), but on switching on the next day everything was fine again. We were elated.

Two days after that it seized up again and we never saw it work again. The next day there was no power at all. I then contacted the shop and it replaced the keyboard. I brought home the new computer today, loaded one of the original games and the ringing started and nothing worked.

I had seen it work in the shop so it must be our disks now. We have switched it off and are leaving it alone until we know what has happened. Have I ruined £700 worth of computer? It took three years to save up for this machine.

I would be so grateful if you have any idea what we have done. It seems odd that the machine gives warning after warning that you might be about to delete something and with a couple of accidental keystrokes cause it to self destruct.

Claire Deverell, Cotham, Bristol.

My first computer was a Sinclair ZX81 and was bought from a well-known high street box-shifter along with several games on tape.

I got the machine home, managed to figure out how to load the games and started to play. Unfortunately, an accidental press of the break key stopped the game and listed the BASIC code on the screen - I was nonplussed! 'Inkey\$'? 'For a\$="press key to begin..."? What could it all mean?

I thought I'd damaged the machine beyond repair and this was its dying message. Later of course I realised that all I'd done was to list the BASIC program commands that constituted the game, but while the nightmare was happening I was extremely upset.

What's all this got to do with you?

Well, I think perhaps that like me, you're reading too much into programming error messages and the like. If you've tried to play games, you must have a joystick plugged into the ST, right?

There's a little problem associated with a certain type of joystick known as an 'autofire' or 'rapid fire' stick and that is, when the joystick is switched into autofire mode, it outputs a constant stream of information to the ST and effectively stops any other data such as that from the keyboard reaching the computer.

There are so many signals coming from the joystick that all the ST can do is to devote its entire processing time to those signals - everything else simply gets lost. What this translates to for the end user, is a machine that won't respond to any kind of keyboard or mouse input. Occasionally, something gets through and the ST will perform some new action then revert to reading the joystick.

Even to the experienced, this problem looks very weird indeed. To the rank beginner, it's almost impossible to determine. The remedy? Ensure that your joystick is switched to manual fire mode, or simply unplug it altogether until a game gets underway.

Don't worry, you haven't damaged the ST - whatever messages you've received while programming. There's nothing you can type into an ST (or any other home computer for that matter) that will damage the machine. So carry on computing and stop worrying!

Cartridge chaos!

After reading various reports about the new STE computer, I found that many software packages and public domain programs are incompatible with the new version of TOS. But what about the ROM cartridges like Multiface, MasterSound, VIDI-ST, Fast BASIC and others?

Also are the new PC emulators and various peripherals such as printers and disk drives compatible? And what about the SC1224 colour monitor which only has one speaker?

Michael Bartek, London.

Unfortunately, because the STE's problems are associated with the incompati-

ble operating system and ROMs, many hardware devices which rely on foibles of the operating system refuse to work.

Software such as games and public domain also tend to make use of undocumented features in order to provide greater speed or to perform what are known as slightly 'illegal' operations such as patching in new operating systems (in the case of emulators).

However, there is no golden rule and some devices will work perfectly well while others refuse completely - it's simply a matter of checking with distributors and dealers before committing hard cash. For example, the popular copying device Multiface bombs the STE and there are no plans to upgrade the device to work with the machine.

Printers, disk drives and the like will continue to work perfectly (although there is a problem when using some televisions, the STE does not output the correct length of burst mode to drive a colour television - six cycles instead of 10), so you can buy these peripherals with confidence.

Be careful to check before buying any device. ■

Hard work has no reward like a true disciple

Having read your column religiously each week for the last year and a half, I decided it was time to see if you could help me. I have an Amstrad IBM compatible computer which I enjoy working on. Recently though I was given for free, two old Future CP/M machines and decided more for interest rather than serious application to get them up and running.

One is an FX30 with 512K RAM, a non-working 21Mb hard disk drive and a single 5.25-inch floppy. The other machine has 256K and a single floppy. Both machines have green-screen, text only displays.

As the concurrent CCP/M-86 operating system was on the hard disk, I've only a utilities disk and a BASIC boot disk for the smaller machine. There is also an MS-DOS o/s version 2.1 disk, but as most modern programs seem to use ROM calls, they won't run properly.

Now I seem to remember a while ago you printed the address of a CP/M user group. Could you do so again so that I could contact them?

In CCP/M-86, the `pip cmd` allows copying of files from drive to drive. Is there any way to do this on a single drive machine?

Do you know of any MS-DOS programs that run without external help from IBM's upgraded machines? It strikes me that version 2.1 of the operating system must have been popular at one time and so there must be some more workable software than the three utilities programs (an STD code database, a calendar and GW BASIC), that I have found so far.

Any help you can provide would be much appreciated. It is a shame that these machines were consigned to the scrap heap as the initial brochures that I've found show that they cost a pretty packet! They've got quite fast 8MHz 8088 central processors and the MS-DOS command formats and standard 5.25-inch disk drives which can be formatted to 800K! N K Alefounder, Nort Hykeham, Lincoln.

I sympathise with your enthusiasm over these two dinosaurs from a bygone age. It is an exciting challenge to get old equipment up and running and in your case - with a bit of luck - the task shouldn't be too difficult.

Firstly, you do need to make contact with the CP/M user group, and it can be reached at 72 Mill Lane, Hawley, Dartford DA2 7RZ. The group distributes an excellent newsletter

keeping CP/Mers informed of the latest happenings, newly unearthed public domain programs and various goings-on in the CP/M world.

The group also has the best collection of CP/M public domain software in the country, and as CP/M was one of the first usable small computer operating systems (the first?) there is a large amount of very good stuff available free, covering all tastes from business to leisure and back again (watch out for the Express weekly PD guide in Shopping Express). Send a few pounds to the group and it will reciprocate with membership details and so on.

Copying files with one drive? I have the CP/M-86 user guide here on my lap as I write but I cannot determine whether PIP will simply prompt you to insert the disk for drive B: if you specify an A: to B: copy and only have drive A:.. Previous versions of CP/M will allow you to do this, but the CP/M-86 manual simply doesn't give directions one way or the other. The solution is to try:

```
PIP d:{{Gn}} = source-filespec[options]
```

to copy a single file, and

```
PIP d:{{Gn}} = {d:}wildcard-filespec[options]
```

to copy multiple files, where Gn is the user number specified by n and options are the echo, verify, object file, system tracks, etc, options you can employ when copying. If you try this and CP/M-86 prompts you to insert the disk for drive b:, do so.

There are lots of PC programs that support(ed) 2.1 (the original PC version of WordStar for one), although you may have trouble locating commercial offerings. Probably the best course of action is to place a free ad in Shopping Express exhorting readers to sell you anything that they know will work. Alternatively, the public domain is the place to try for 2.1 programs and again, Shopping Express is the best source.

My advice is that you keep trying with these machines. You've managed to pick up free what would have cost a year's salary for an Agony Uncle just four or five years ago. There's a lot of life in the old dogs yet, and if you can collect some half decent software you'll be able to put them to full and productive use - good luck!

■ WPs à la mode

J Vickers of Herne Bay (*Express* 75) queries the points I made about the *Protext* word processor in my last letter, and I'm happy to explain further.

Modal programs are inefficient because extra keystrokes are needed to select the mode your require. They are user hostile because the same keystroke can have different meanings depending on the mode – pressing P, for example, could either type the letter P in your document, or print the document. It's all too easy to forget which mode you're in, and get the wrong result (this may never have happened to Mr Vickers, but it happens to people in my office all the time).

Human factors experts are industrial psychologists whose brief is to study and, if possible, improve the way humans and machines interact. One of their suggestions is that programs should be non-modal, like *WordPerfect*.

The sense and logic behind this is that the elimination of unnecessary keystrokes, errors and frustration will make word processor users all over the world happier and more productive in their writing work.

I don't see why Mr Vickers thinks this is misleading.

Martyn Dryden, Wimborne, Dorset

To be honest, when you are as absent-minded as I am, even word processors which toggle between forward/backward delete or insert/overtyping can create havoc. Any further contributions to the modal/non-modal debate?

■ I wish to complain...

Our company is the approved dealer for Zenith Data Systems in the south east of Ireland. I am, therefore, writing to you to point out some errors and what can only be described as bias in your Top 50 PC listing (*Express* 73).

Your review of the Zenith EAZY-PC (that is correctly spelt) was misleading on several counts.

Firstly, the computer is called the EAZY-PC, not Easy PC – EAZY being an acronym, not a statement that the machine is easy to use.

Secondly, Zenith Data Systems discontinued the EAZY-PC some six months ago, why did you not choose one of their more up-to-date models, such as the Z-286 LP/12 (Power Rating 85, according to your system), or the Z-386/33? You only included one, discontinued, Zenith machine whereas you included several of others such as Amstrad or Tandon. The Zenith desktop machines seem to be widely ignored in the computer world. Perhaps you could give me a reason for this, as the Zeniths that I have used seem to be good quality, fast machines.

Thirdly, you deduct points for the Amstrad's flimsy plastic casing, but why did you not add merit points for the fact that all Zenith desktops are metal-cased, sturdy machines? Obviously your power



points system was completely useless, or maybe your company ZX81 has broken down again (very *drôle* – Ed) but by adding up using your system the Zenith should have had 39, not 29 points.

Lastly, I feel that anyone misled on the basis of that item would be quite within their rights to report the matter to the Advertising Standards Authority or the Press Council. Zenith has been treated very unfairly and, for the price of only £499, the EAZY-PC is the ideal starter's machine. You show me a similar machine for such a low price.

I trust that my apology will be printed. Although I doubt that this letter will ever reach your letters pages, I feel that the points had to be made. Perhaps people now will understand that the EAZY-PC is actually an entry-level PC (you can't get more entry-level than no expansion slots), and should have been given a fair and just review. I hope that before considering a feature like this again you will get your facts right concerning all the machines.

G Rudge, Carrick on Suir, Co Tipperary, Eire

We are aware that some of our buyer's guides are getting a bit long in the tooth, and plans are in hand to update them as soon as possible, resources permitting. Clearly if the EAZY-PC is discontinued it will be dropped from future issues.

You make an excellent case for the EAZY-PC (by the way, if that's an acronym I'd like to know what it stands for). Regrettably it appears that Zenith didn't see it the same way, as it has discontinued it. If readers really wish to get hold of a single floppy PC with less than standard memory, no expansion possibilities and a hideous graphics display, I recommend they have a look at the Amstrad PC200.

That kind of 'entry-level' machine misses the whole point of the PC range – that a machine can be expanded and configured to meet individual requirements. My own machine started life as a 4.77MHz PC with 256K of RAM and has

EXPRESS MAIL

Britain's liveliest computing forum – packed with comment, controversy and conflict. Write and tell us what you think! Reach us at: **Express Mail, 30 Monmouth St., Bath BA1 2AP.** Sorry, no personal replies, even with an sae. This week's replies by Stuart Anderton.

since sprouted a second disk drive, a hard disk, a megabyte of memory, a 386 processor, a clock, a joystick port... I could go on. And at no point did I have to buy a new machine, simply slot new bits into the original.

If you want to buy a single-unit machine for serious work at home, buy an ST or an Amiga – either machine is infinitely more flexible than a bottom-end PC clone.

■ Trouble with Trekkies

Some weeks ago, William Shatner, of *Star Trek* fame, was over here pushing the release of his new book *Tech Wars*. I only half caught the radio interview, but I think it's a story of drug-pushing and microchips or drugs on chips/computers which all takes place some distant time in the future.

I thought that, being in the publishing industry, *Express* would have done a review by now. You haven't. So take this letter as a prompt to let you know of the book's existence. I'm sure there will be many 'Trekkie' fans within your readership who would like to know what the real man behind the Captain Slogg make-up can put into print.

PS I know a good home for the review copy.

Paul Trainer, Oakwood, Leeds

I see that the publisher is pushing Shatner's book as being from 'the man who really knows'. Interesting *Star Trek* fact: the shirt that James T. wore in series was in fact green, but the colour processing they used for the film turned it yellow, so yellow it became. Not a lot of people know that...

■ Annoyed Archie

I am writing about the smart-ass Chris Eason, in *Express* 75. I, too, have reached the stage where I can 'cast aspersions from an apex of superiority'. Unlike him, however, I do not have the mentality of a

14-year-old schoolboy (perhaps he is 14?). Therefore I am not going to let him get away with it.

Next time he opens his mouth, let him get all his facts right: when the Icon bar fills up, the operating system scrolls the icons left and right by pointing with the mouse, it is not necessary to run *TinyDirt*. This utility has nothing to do with it.

I hope that I have set the record straight and put Chris Eason in his place. Lastly, I would like to say that I agree with Keith's reply and that I enjoy Bertrum's column very much; it is often the first thing I read.

Michael Stirling, Hounslow West, Middx.

I'm afraid that an over-generous dollop of blue pencil has rather misled you about Chris Eason's intentions. I'll let him explain:

■ I didn't say that!

You really are quite ruthless, aren't you, both with your editing and replies? Allow me the benefit of replying.

Firstly, I realise that you have to clip letters to fit them in, but I didn't write 'I'd like to moan at Archimedes columnists who don't know enough about it' but 'I'd like to have a little bit of a moan at Archimedes-related columnists who don't really seem to know enough about the machine they're using to be able to write about it'. I was trying to be tactful, not elitist! My original letter was softer in tone than the edited version you printed.

I think the printer resolution problem is a fair criticism. If print coming out of a laser printer is noticeably ragged, then I would think that the print resolution setting springs instantly to mind. Also, if Bertrum uses his Arc a lot, which he probably does to be able to write a column about it, then he really should know about these things. To know about that doesn't require expert knowledge of the OS, as you suggest, but just a rudimentary knowledge of how to use the printer drivers.

You say that your columnists don't

have ■ know about everything that exists in the OS. That's fine, and I wouldn't think that many people do. But surely they should have a fair amount of knowledge in order to write about the machine sensibly? ■ the end, though, you can always say that printing these things can be valuable, as if the writer doesn't know, then there might be somebody else who doesn't.

I agree that in the space allocated, the journalists at *Express* do their job well. This leads me say that if they had even more room, they could do it even better. I'm sorry that you take umbrage when presented with a little criticism.

I certainly did not intend the letter to come across as if it had been written from 'an apex of superiority' at all and apolo-

gise if it did. You can now stop casting aspersions about me having a superiority complex, thank you very much. Also, I didn't mention that I thought I knew more than Bertrum, who does do a good job. I am not an expert on the Archimedes and I would never claim ■ be, so don't put words in my mouth.

I don't think it helps anybody if you take people's views out of context so that you can write a sarcastic reply just to make the letters pages more exciting. Wouldn't you say that you yourself have something of a superiority complex for writing the number of off-hand, and occasionally rude, replies that you do?

You obviously have your own views about what the length ■ reviews should

be, and I have mine. In my opinion, if you devoted more space to reviews of major applications, you could do these products better justice. By the way, if anybody is interested in *Impression*, they might be interested that an impressive-looking supplement about DTP on the Archimedes that comes with the May 1990 issue of *BBC Acorn User* was produced with it. Several Acorn-based magazines have also printed more detailed reviews.

Finally, I would like to say something positive. *Express* is a great journal, and I really enjoy reading it with its lively style, so keep going! I would like to thank everybody involved with *Express* for something to do on a Saturday afternoon! The reader ads are also invaluable. May you forever

keep increasing the size ■ the Arc column and may Bertrum continue to write it!
Chris Eason, Lillington, Leamington Spa, Works

Having compared your first letter with what we printed, I agree with you totally - we did indeed substantially alter the content of your letter in the editing. For that our apologies, and in future we will try to be more careful.

As to the length of reviews in *Express*, as I'm sure you appreciate, space is very much a limiting factor. We try to cover 12 machines in our 70 or so pages, so long in-depth reviews of a product which is only of interest to a tiny proportion of our readership are low ►

■ Differing opinions on the SAM Coupé

Relating to your editorial on the SAM computer, *Express* 75, and putting its problems in perspective, I will recite my experiences. I don't know how typical they are but, obviously, I can only state the facts.

The SAM arrived and the first thing was to extract a loose stray nut from inside the power supply. Its associated screw was later found loose in the packing.

Connecting it to a Toshiba set failed to produce any colour. Connecting it to a Panasonic set suffered from a high video buzz on sound. A GEC set was fine.

Next came problems trying to load tapes: I eventually managed to load the demo and the *Flash* program. However, the loading time from tape precluded serious use, also the Spectrum emulator produced zero results from my Spectrum tapes.

The next thing I noticed was that circles were oval, and it became obvious that the display ratio was incorrect for a normal TV.

After about a month of carrying out a considerable number ■ tests trying to load tapes I was convinced that it was the SAM at fault and not my three recorders or tapes (100 per cent OK with the Spectrum). However, all I got out of MGT was a statement to the effect that a number of recorders had been tried with the SAM and it was found that cheaper ones were better.

The computer then developed an intermittent video fault and so was sent back to MGT.

The replacement worked OK with colour on the Toshiba set but still had the sound buzz on the Panasonic. The tape loading was also considerably better and far more reliable. Circles were still oval, but I have since seen this on another SAM so I presume, for some reason, that this is intended.

The DOS, printer and external drive interface arrived and, as all good practice dictates, I tried to do a back-up copy of the master DOS disk. Fourteen hours later, after trying every combination of drives and step rates, I gave up trying to do a copy as every one was corrupted. On top of this, every time I loaded the *Flash* program I got a corrupted DOS. I didn't know, at this stage, that both Copy and *Flash* were corrupting things. I also tried doing a screen dump as per the handbook, without any success.

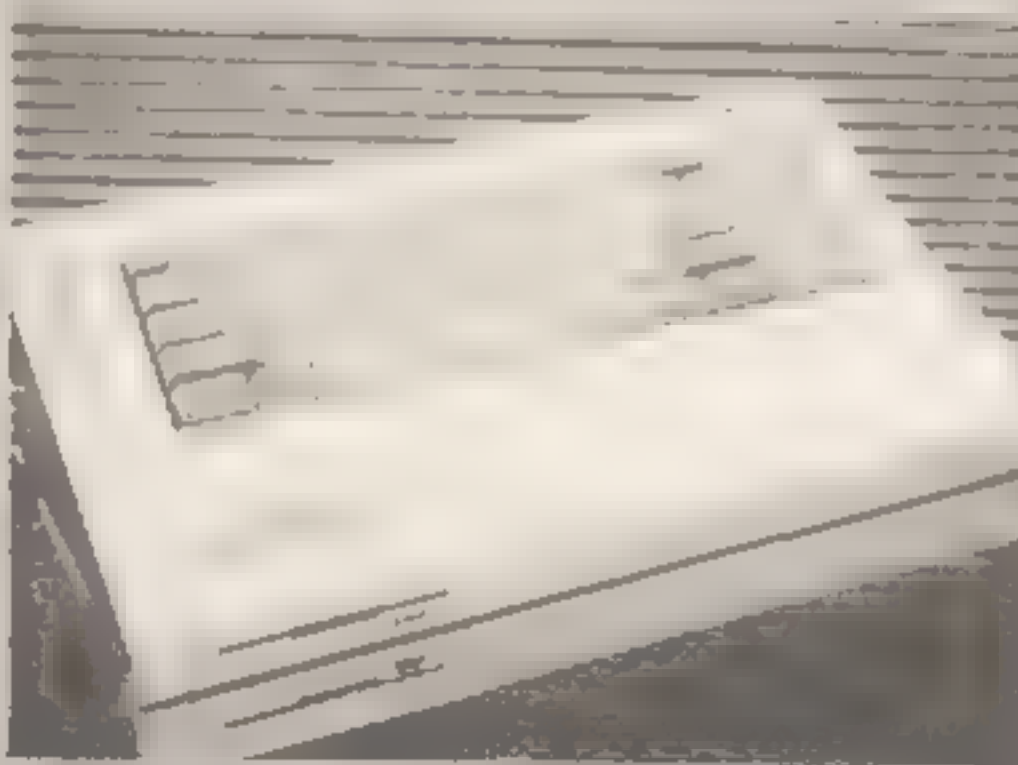
I sent the corrupted disk to MGT, stating the problems. Back came the disk with a message: "Corrupted disk reformatted and new DOS put on and hope everything now OK". It was not. The corruption was still present and the dump still did not work. Furthermore the returned disk was damaged, so back it went.

Another new disk was received - "Hope everything OK". No, all the problems were still the same.

At this point I could only presume that I had a

second faulty SAM, so MGT was contacted again, all the problems listed and a full refund asked for. MGT promptly telephoned me to arrange collection and tell me that refund arrangements were being made.

What annoyed me particularly was that the day after MGT telephoned me I received, through the post, a booklet detailing ROM bugs and what was being done about them. It also explained that Dump had been left off the ROM because of lack of space. Most of my 'faults' had been covered and were due to be rectified in the new



• The SAM: if only MGT had said about the bugs...

ROM. So, at the time MGT was sending me the DOS and saying "Hope all OK now" it knew perfectly well that it would not be. At the time MGT telephoned me about the refund not a word was said about a detailed list being in the post, which covered almost everything I had been stating as faults, or that it was working on a new ROM.

Had this been said it is unlikely that I would have asked for a refund but would have waited for the new version, as it appeared to resolve most, if not all, of my problems. I have also seen comments that indicate that while MGT was offering unhelpful comments about "cheaper recorders" it could well have been aware of tape problems on some early machines. Furthermore, speaking to an MGT agent I was informed that MGT had been told that there was a tape problem. I was proved right that it did have a tape problem when I sent it back, but it still cost me £4.

You will see my complaint is not to do with the actual bugs in the SAM; being a new machine I was prepared for some and I had confidence in MGT correcting them (which it appears to be doing). My complaint is lack of correct information from MGT.

I still consider that SAM is an excellent machine and a lot has gone into its design in the features it offers, but I consider it has been let down in my case through poor customer service and information.

M Perry, Kidderminster, Worcs

Contrary to what most of the (published) letters have to

say about the SAM Coupé, I would like to put a few things straight.

The computer has exceeded most people's expectations. I already use the printer interface for dumps and to word process (*Tasword* conversion). There is a mouse on the way which most *Flash* users will welcome. The keyboard is great (OK, so anything would be after the Speccy), and the snapshot facility is a boon. The disk drive is smooth, quiet and fast. The latest idea of installing the Spectrum ROM (from my own Spectrum, Mr Sugar, honest) makes almost 100 per cent of 48K games compatible.

The after-sales service I found to be excellent. Yes, there were initial problems, most of which stemmed from a dodgy ROM. These have since been rectified. The new ROM chip is being despatched (along with the latest DOS) to all existing owners and the computer's guarantee will commence from the date of receipt of the said chip.

■ terms of third-party support, things are looking up. On the games front, owing to extensive (expensive?) bribes, sorry I mean prizes, the larger software houses are now writing for the Coupé, not just converting a few games. As for utilities, Lerm is writing an editor/assembler and Tasman is almost ready with *Tasword 2*. All looks well for the future, for ■ we are all only too well aware, no software spells death to a computer, be it old or new.

Malcolm Philips

I would like to draw readers' attention, through the pages of your esteemed paper, to the release of *SAMTape* from Lerm for the SAM Coupé. Since the purchase of a Coupé I've been unable to load, via the MGT supplied emulator, any Speccy software, even that which MGT and the press said worked. However, following the purchase of the aforementioned program I've had no bother in loading and saving to disk any Spectrum game. Fully menu-driven, it's an easy program to use, it copies itself to disk and allows you to snapshot your games to disk.

I would like ■ thank Lerm for the full support they have shown me (despite turning up on their doorstep early on a Sunday morning).

Barry Walton, Holywell, Whitley Bay, Tyne & Wear

Now that MGT has fixed - sorry, *upgraded* - its ROM, I'm sure that horror stories of SAM problems will become a thing of the past. It's a shame there is not any software though - I would have thought MGT would have learnt the lesson from many a failed machine and got the basic word processor and the rest sorted out before the launch. Where is the MIDI software to take advantage of those DIN sockets?

on our priority list. I hope you find our news and features interesting and relevant, but if it's four-page reviews of Archie software you're after then, as you say, *BBC Acorn User* or *The Micro User* are the places to look.

Thanks very much for the bunch of Archie tips you sent in - I've passed them on to Uncle Techtip and I'm sure they will appear - in full naturally - in a future issue.

■ Catch a virus

Why, oh why, do I keep reading 'why, oh why' letters in the computer press about computer viruses? I am convinced that viruses have been sent down from software houses to punish those with immoral life styles - the software pirates. ■ has been well publicised that viruses were propagated by those people sharing infected disks, and I cannot feel any sympathy towards them.

I do, however, feel sorry for the innocents, who have been infected by these people. I think that there are two lessons to be drawn from this, viz: do not share

disks unless you have to, but if you do, share with as few people as possible; and, secondly, take all precautions before using a doubtful disk.

Andrew Veitch, Edinburgh, Scotland

Thank you for your illuminating and original advice, I'm sure we'd all sleep sounder in our beds if we followed it.

■ Flight of the Phoenix

Further ■ your article in *Express* on the Phoenix upgrade to the Amiga, I have an Amiga A1000 and would appreciate any other information you may have on the Phoenix that is available in the UK. Alternatively, if you have an address in Australia, that would suffice.

P Wood, Morley, Leeds

You can find Phoenix Microtechnologies Pty. at 18 Hampton Road, Keswick, South Australia 5035, telephone 010-08 293 8782. Phoenix reckon that nearly 500 people have already put down cash for the A1000 upgrade board.

And while we're talking of Australia:

■ Behind the times

I would like to congratulate you ■ on a fine weekly magazine that is informative and, at the same time, witty. Today I bought issue 57, and with my Amiga in hospital I'd like to comment on piracy and exorbitant software prices. Piracy is rife in Australia, though I do not think people go around selling bootleg copies.

However, software here costs the equivalent of £45.50 a program, (with some exceptions, like *Hard Drivin'* at \$54.70 - £27 - which is more like it), so somehow, I don't think the pirates will stop.

Thanks for a great magazine, even if it does take three months to get here.
C Sherlock, Wagga, New South Wales, Australia

If you've just read issue 57, I figure you should be reading this reply around the end ■ October, so perhaps by then some entrepreneur will have started importing games into Aus at more reasonable prices. £27 a game might be "more like it" to you but it sounds extortionate to me. ■

■ Retaliator is bugged - or is it?

I don't know ■ I'm more disgusted with Ocean for bringing out a game still bug-ridden despite being four months late, or with the incompetence of the reviewing fraternity in failing ■ spot the flaws. I am, of course, referring to the game *F-29 Retaliator*, which Ocean recently released.

The worst problems are that the forward radar doesn't work, so you can never tell what you are shooting at unless you can see it, and the air-to-ground missile target acquisition system also doesn't work, so the only way to hit a ground target is ■ point-blank range. This severely restricts the playability. As far as ground attack goes, it's not so much like flying a sophisticated modern aircraft as flying a Hawker Hunter. There are also a number of more minor bugs.

I spoke to Ocean, who said that the manual was written before the game was completed, and that features documented in the manual do not, necessarily, appear in the game. Fine, lot of use that is! Yet, according to your correspondent (Amiga column, *Express* 76) the manual "ties in with the game perfectly" - has he got the same game?

It is rather unfortunate that this faulty product ■ going out as part of a bundled package with the Amiga - I bet a lot of buyers will start blaming their new computer for the faults of the program.

Would someone tell me what ■ the use of reading game reviews if not one of them spotted these rather obvious flaws?
Roger Musson, Edinburgh, Scotland

I must agree with Matt Evans' review of *F-29 Retaliator* (*Express* 76) for the Amiga; it is incredibly impressive, with its amazing speed, detailed graphics - although I don't know where he got the idea that the sound 'has been used to great effect'. However, I feel that I must warn fellow Amiga owners of one fact that Matt Evans did not mention in his review: the game is completely bug-ridden.

In its rush to get the game ready for the Commodore *Fantasy Flight* bundle, Ocean has arrived at the inevitable consequence: the company has produced a bugged product. Let me explain.

I bought *F-29 Retaliator* from the local shop for a hard-earned £25 and when I got it home I was stunned. I couldn't believe the speed; much faster than all the other sims and it had much better graphics as well. So I kept on playing it and playing



■ *F-29 Retaliator*: you are not alone.

it. When I did the 'Bravo' mission in the Middle East scenario, however, I noticed that something was slightly wrong - as soon as I flew into the sector where the reported enemy was, the message 'Well done, commander' appeared, telling me that I'd completed the mission. Odd, when I hadn't so much as armed my weapons, let alone fired a shot. This happens on another mission as well - 'Aggressor' from the Europe scenario. There could be more for all I know, but I was too mad to bother trying all the missions out.

I took it back to the shop and they said that it wasn't just my copy that was corrupt, everyone else who had bought it had gone back complaining.

So, if you still think *F-29* is worth £25 after all that then go out and buy it. Me? I'm asking for a bloody refund.

A J Warren, Southampton

Serious allegations these. I fought my way through the stacks of games to the other side of the building where they put together *Amiga Format*. There some of the world's most experienced games players, as they like to style themselves, informed me that most of *F-29*'s bugs are just minor screen glitches of the kind you have to expect from any game that drives the machine flat out - programming niceties have to take ■ back seat to sheer speed sometimes.

The main 'bug', that missions are completed before you start, is in fact a feature. You are not alone in fighting each scenario - there are ground troops in action too - so if you take a while to reach the battle scene your buddies may have already won without your help.

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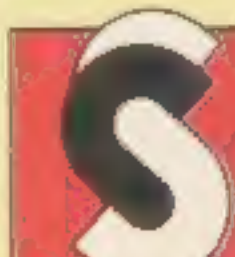
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GIRLS JUST WANNA HAVE FUN!

Why do so few women play computer games? Sandra Vogel argues that it is all down to the way they are presented...

The first and most important barrier to be broken down between women and computer games has nothing to do with the games themselves. It is a case of convincing the people who matter that women and girls really *do* play games, and we really *are* interested in leisure software. These people include software houses, journalists, games writers, graphic artists, retailers and gamers themselves.

Many estimates of the numbers of women and men who use computers for leisure come from magazine reader surveys. These can be very misleading. Magazine questionnaires are usually filled in by one person, probably the purchaser, often also the main computer user. But the household computer (and any magazines) may be used by more than a single person. Brothers and sisters, mums and dads are all likely to use the computer at some time.

Further, and particularly for younger users, it is more than likely that 'mum' has the final word on software as she often makes the purchase and controls the number of hours spent glued to the machine. Who knows, she may even play games herself!

So we only need to look a little bit harder than we currently do to uncover the large number of women and girls who play computer games.

Hardware manufacturers are at last beginning to realise that the computer should be a household item

rather than an individual possession, and are widening their marketing accordingly. This is particularly clear in the case of the new hand-held machines, with Atari's Lynx in particular being marketed to whole families. Nintendo is trying a similar marketing tactic with its unfortunately and short-sightedly named Gameboy. Does Nintendo really think a machine with that name will appeal to the potentially huge female market?

Software manufacturers, however, seem slower to catch on. Understandably so in some cases, as they clearly have quite a captive market in male users who seem to like 'formula' software.

ADVERTISING

Advertising is a key area in the leisure software industry. Ads placed in magazines are the main way that users learn about the existence of new software. Games producers are in a constant battle to produce ever more eye-catching advertisements.

This often results in the use of stereotypical characters and advertising using 'lowest common denominator' features. One of the lowest common denominators is using busty, clinging women and over-muscled, weapon-toting men to attract attention.

Probably the most notorious sexist advertisement to appear was the *Barbarian* ad in 1988. This was one of the first cases where a well-known page 3 model was used to sell a computer game. In this ad Maria Whittaker was accompanied by a nameless hulk (isn't it interesting that we don't remember his name?).

Rarely do we see an advertisement where a woman is the sole character appearing. The recent *Elvira* game is one such example, and the sexual element was central to the advertising campaign. (A pity when the game itself seems to stand up very well without such marketing tactics).

Before long the advertising road leads us to the sexism *versus* art debate. Hewson's advertisement for *Astaroth* fell into this group. Retail chains refused to use point of sale advertising for this game partly on sexist grounds, while Hewson, and a number of computer



• *Astaroth*: art or exploitation? Either way the game hardly sets out to appeal to female gamers.

owners, bemoaned the censorship of a 'piece of art'. I leave you to ponder this debate for yourself. A quick flick through any magazine will reveal a number of more up-to-the-minute cases of gender stereotypes and sexism in advertising.

GAME CONTENT

Game scenarios may mean little to those of us who have been buying software for years, but to the newcomer to gaming they are essential.

Some adventure writers are beginning to realise that there is a female market, and write for it, producing adventures with less sexism in their content, and often with female leading characters.

Some software houses however, are still in the dark ages regarding what constitutes a non-sexist game – *Plundered Hearts*, for example, was an adventure released in 1988. It was set on a pirate ship, and you, a woman, had been captured by a wicked pirate. The adventure was written in romantic novel style, and before long you were 'falling willingly into the muscular arms of your hero'. Hardly anti-sexist.

Other examples of software houses trying to lure women into the games playing world include simply reversing the plot, so that the female character ends up trying to rescue her boyfriend from the evil prince/witch. Clearly neither of these solutions avoid gender stereotyping – they simply substitute one set of stereotypes for another. They are a step in the right direction, though, and a far cry from the more 'popular' end of the industry – even basic gender choice is still a rare sight indeed. ■



• *Elvira*: the game stood up without the sexual marketing.

OASIS IN THE DESERT

As long as computer users seem largely happy with sexist advertising and game content, software houses will churn this material out, make their money and run. That's where OASIS comes in.

OASIS (the Organisation Against

Sexism In Software) exists to provide a lobbying voice for women and men who use games and want to make a noise about sexism. And it's not just for the consumer. Members include journalists, magazine editors, programmers, teachers and even

whole software houses (though no 'big names' as yet). OASIS has been gathering support and growing since its inception nearly two years ago. If you want to know more about OASIS send an SAE to 3 Alden Court, Stanley Road, London SW19 8RD.

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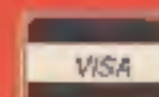
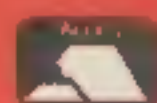
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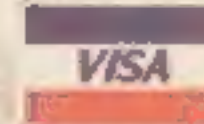
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